"Effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS at AIIMS Bhopal"

Dissertation

Submitted to Faculty of Nursing

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, BHOPAL

In partial fulfillment of the requirement for the degree of

M. Sc in Nursing (Obstetrics and Gynecology Nursing)

By

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Paper/Submission ID	1428424
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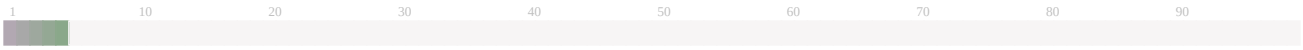

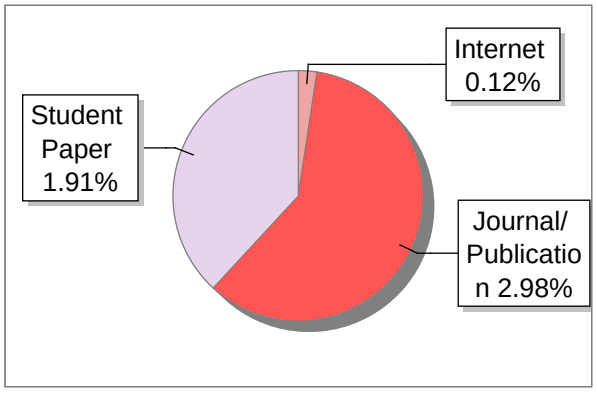

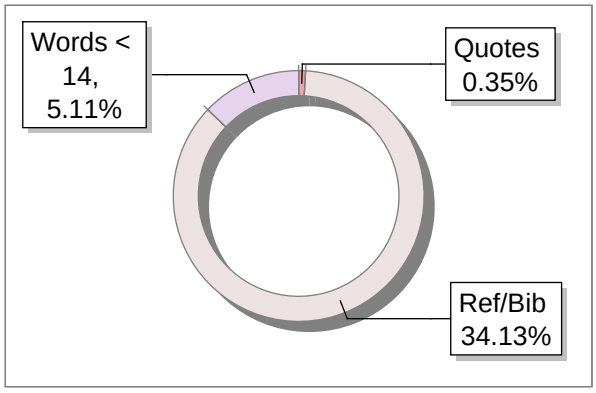

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Institutional Human Ethics Committee- Student Research (IHEC-SR)

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Ref Number: AIIMS/BPL/IHECSR/July/22/MscN/16 **Date:** 28th February 2023

Letter of Permission

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AIIMS, Bhopal Institutional Human Ethics Committee- Student Research (IHEC-SR) in its 7th meeting held on 22nd February 2023 discussed your proposal titled **"Effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS at AIIMS Bhopal"** and evaluated it for suitability for your dissertation as required for fulfilment of MSc (Nursing).

Following members attended the meeting:

1. Prof. D. K. Pal, Former HoD Community Medicine, GMC, Bhopal……..Chairperson
2. Prof. Rajnish Joshi, Professor of General Medicine, AIIMS, Bhopal……Member
3. Prof. Amit Agrawal, Professor of Neurosurgery, AIIMS, Bhopal……..Member
4. Dr. Sunita Athawale, Professor of Anatomy, AIIMS, Bhopal……..…Member
5. Dr. Girish Bhatt, Addl. Professor of Paediatrics, AIIMS, Bhopal……....Member
6. Dr. Ujjawal Khurana, Assoc. Professor of Pathology, AIIMS, Bhopal……...Member
7. Dr. Ankur Joshi, Assoc. Professor of CFM, AIIMS, Bhopal……...Member
8. Mr. Trivesh Goswami, Law Officer, AIIMS Bhopal,…..……..Member
9. Dr. Shashank Purwar, Professor of Microbiology, AIIMS, Bhopal…..…Member Secretary

The decision of the committee is as follows:

The AIIMS, Bhopal IHEC-SR approves your research protocol. All research related activities must begin only after the date of this approval. The validity of this approval is till two years from the date of issuance. Please submit a closure report / renewal request before expiration of the validity for this approval.

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ACKNOWLEDGEMENT

"Set thy heart upon thy work, but never on its reward."-Bhagavad Gita

I am grateful to God for bestowing upon me wisdom and perseverance throughout this effort and, in fact, my entire life.

Writing the acknowledgment is perhaps the most difficult part of a thesis. A few seconds of reading time must be used to compress months of arduous work, hours of guidance, and minutes of enlightenment. This thesis has stayed on course thanks to the support and encouragement of several individuals. It gives me great pleasure to express my appreciation to everyone who made this study a huge success and an incredible experience for me.

First and foremost, I would want to express my gratitude to my wonderful parents, Mr. Jagannath Mondal and Mrs. Sumitra Mondal, my sister and one of my best friend for their numerous contributions to my life. I never would have made it to where I am now without them. They have cheered me on for all of my accomplishments and helped me when I faltered. They have showered me with their boundless love and blessings, and I am appreciative of it.

My guide, A lot of credit should go to Dr. Naseema Shafqat, Assistant Professor, Nursing College, AIIMS Bhopal, for holding my hand the entire way. None of this could have happened without her guidance and support. I will always be grateful for your exceptional understanding, support, and patience with me as a teacher. I will always be grateful for the education I received from you. I was motivated to give it my all by your belief in me. I shall make an effort to imitate your wonderful traits in my career.

My sincere gratitude goes out to my co-guides, Ms. Geeta Bhardwaj, Assistant Professor, AIIMS Bhopal's Nursing College; Dr. Mudda Sofia, Medical Officer (Yoga), AIIMS Bhopal's Department of AYUSH; and Dr. Bharti Singh, Associate Professor, AIIMS

Bhopal's Department of Obstetrics and Gynaecology, for their prompt and insightful feedback on my project. They are genuinely a never-ending source of inspiration, contributing both vital ideas and important insights to our study project.

I would like to officially thank Dr. Mamta Verma, the I/C principal of the AIIMS Bhopal Nursing College, for her academic mentoring.

I am appreciative to Dr. Lily Podder, an associate professor at the AIIMS Bhopal Nursing College, for her insightful advice and significant contributions.

I am appreciative of the HEC-PGR for enabling me to carry out this study and for their insightful criticism.

Taking this moment, I would like to use this opportunity to express my sincere thanks to all of the AIIMS Bhopal faculty members for their support and encouragement.

I would like to express my heartfelt thanks to the Medical Supervisor at AIIMS Bhopal and the Head of the Obstetrics and Gynecology Department for enabling me to complete the data-gathering procedure.

Utilizing this opportunity, I would want to express my gratitude to the participants and their families for their participation. They gave me all the information I need, showed me trust, and helped.

I want to express my gratitude to all the specialists who gave their best during the validation process of my product by offering advice.

I appreciate the invaluable statistical and research advice provided by Dr. Ananthan, Senior Resident, CFM Department, AIIMS Bhopal, and the statistics team.

I would also like to extend warm appreciation to my dear friends for giving me unwavering excitement and psychological support whenever I encountered difficulties.

My deepest gratitude goes out to the Central Library personnel as well as the other non-teaching staff of AIIMS Bhopal's Nursing College for their invaluable assistance and

support.

Not to mention, I would like to express my gratitude to several other individuals who, both deliberately and unwittingly, assisted me in finishing this task successfully.

Date: 13.02.24

Place: Bhopal

Malini Mondal

ABSTRACT

Introduction

Nursing self-efficacy, representing a woman's confidence in her ability to breastfeed, plays a pivotal role in both the initiation and sustained maintenance of breastfeeding. Despite its significance, challenges such as insufficient breast milk may arise leading to impaired maternal identity and the emergence of guilt sentiments and necessitating supportive interventions to foster successful breastfeeding experiences. This study delves into the potential benefits of reflex zone stimulation, a non-invasive therapeutic approach, in enhancing breastfeeding efficacy among postnatal women who have undergone Lower Segment Cesarean Section (LSCS).

Methods

This study employed a randomized controlled trial (RCT) design, employing a single-blind approach, with a total of 80 postnatal women with LSCS using the SNOSE (Sequentially Numbered, Opaque Sealed Envelope) sampling technique for group allocation. Comprehensive sociodemographic and clinical data were recorded. Pain assessments done during rest, movement, and breastfeeding phases. Standardized tools, i.e. Postpartum Comfort Questionnaire (PPCQ) and LATCH, were utilized to measure breastfeeding efficacy. To evaluate the effectiveness of reflex zone stimulation, unpaired and paired t-tests, as well as repeated measures ANOVA, were applied.

Results

The experimental group had a mean age of 27.32 years, while the control group exhibited a mean age of 28.65 years. More than 35% of women in both groups completed higher secondary education and the majority (82.5%) identified as unemployed/homemakers. Most women (55% in the experimental group and 45% in the control group) experienced first time pregnancy with a mean gestational age of 38 weeks at delivery. All women reported the incision site (100%) as the most common site of pain, characterized as horrible in nature by 65% in the experimental group and 75% in the control group . The total pretest comfort score for the experimental group was 83.97± 4.48 experiencing a remarkable surge in post-test 158.10± 3.19. On day1, 87.5% of women exhibited low LATCH scores and by the fifth day, 100 demonstrated high levels of breastfeeding efficacy. The mean LATCH scores on the fifth day were markedly higher in the experimental group (9.85) compared to the control group (5.08) after the intervention. Correlation analysis highlights the negative associations between pain scores and both

comfort and LATCH scores in the experimental group. These negative correlations suggest that increased comfort corresponds to decreased pain, and reduced pain correlates with enhanced breastfeeding efficacy.

Conclusion

This study reveals that reflex zone stimulation holds promise in enhancing breastfeeding efficacy among postnatal women with Lower Segment Cesarean Section (LSCS). The findings underscore the interconnectedness of pain, comfort, and breastfeeding outcomes, emphasizing the potential of non-pharmacological interventions in improving maternal well-being and promoting successful breastfeeding experiences in the postnatal period.

Keywords: reflex zone stimulation, breastfeeding efficacy, lower segment cesarean section postnatal women, postpartum comfort, non-pharmacological interventions, randomized controlled trial.

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15.	Informed consent form (Hindi and English)
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LIST OF ABBREVIATIONS

S. NO	ABBREVIATIONS	EXPANSION
1	LSCS	Lower segment Cesarean Section
2	AIIMS	All India Institute of Medical Sciences
3	IHEC -PGR	Institutional ethic committee – Post graduation research
3	CVI	Content validity index
4	M.Sc.	Master of Science
5	PPCQ	Postpartum Comfort Questionnaire
6	WHO	World health organization
7	SD	Standard deviation

LIST OF SYMBOLS

S. NO	SYMBOLS	EXPANSION
1	%	Percentage
2	>	More than
3	<	Less than
4	-	Minus
5	=	Equal to

CHAPTER-I

INTRODUCTION

CHAPTER-I

INTRODUCTION

"It is only in the act of nursing that a woman realizes her motherhood in visible and tangible fashion; it is a joy of every moment." —Honoré de Balzac

The profound experience of giving birth marks a transformative chapter in a woman's life, where the joy of new life is accompanied by the physical challenges of childbirth[1]. Normal human reproduction encompasses the physiological processes of pregnancy and delivery, with the majority of women naturally delivering healthy infants [2]. Amidst the pains of childbirth, the unparalleled bliss a woman experiences when breastfeeding her newborn for the first time unfolds as nature's own nurturing embrace. Breastfeeding stands as an unparalleled cornerstone of infant nutrition, providing a unique connection between a mother and her child. The intrinsic value of breast milk, surpassing any artificial supplement, lies in its ability to supply all essential nutrients tailored to a newborn's needs [3]. The act of breastfeeding extends beyond nourishment; it serves as a profound mode of communication, facilitating the passage of maternal microbiome and microbiota to the infant [4]. The benefits of breastfeeding extend far beyond the immediate moment, offering protection against a spectrum of conditions, including leukaemia, necrotizing enterocolitis, celiac disease, and various infectious, atopic, and cardiovascular disorders. Moreover, breastfeeding contributes to neurodevelopment, reducing the risk of developmental issues and behavioural disorders. With the potential to avert 13% of global baby deaths and decrease sudden infant death syndrome incidence by 36%, breastfeeding emerges not only as a health strategy but also as an eco-friendly and cost-effective choice [5]. In tandem with these advantages, breastfeeding bestows preventive benefits upon mothers, reducing the risks of type 2 diabetes, ovarian, and breast malignancies [6]. The global imperative to encourage breastfeeding aligns with the World Health Organization's recommendation of exclusive breastfeeding for the first six months and continued

breastfeeding for up to two years. Despite these recommendations, challenges persist, exacerbated by the escalating rates of cesarean section deliveries worldwide.

The prevalence of Lower Segment Cesarean Section (LSCS) as a mode of childbirth has become increasingly common in the changing dynamics of contemporary obstetrics, this surgical procedure, while offering a safe alternative in certain medical situations, poses unique challenges for postnatal women especially its potential impact on breastfeeding initiation and efficacy, a pivotal aspect of maternal-infant health. Studies indicate a concerning trend; women who undergo cesarean sections are less likely to initiate breastfeeding promptly, and the delay in initiation correlates with a shorter breastfeeding duration [6,7]. The first hour following birth emerges as a critical period for successful breastfeeding initiation, with skin-to-skin contact playing a pivotal role. Cesarean deliveries, however, often lead to delays in breastfeeding initiation due to factors such as maternal-infant separation, impaired suckling skills, decreased infant responsiveness, and inadequate milk production.[1] Unfortunately only two out of every five infants worldwide are breastfed within their first hour of life[4,5]. The prevalence of caesarean sections worldwide has increased from around 7% in 1990 to 21% currently. In the event that this pattern persists, the research indicates that by 2030, the regions with the highest rates are probably Eastern Asia (63%), Latin America and the Caribbean (54%), Western Asia (50%), Northern Africa (48%), Southern Europe (47%), Australia, and New Zealand (45%)(2). The global surge in cesarean section rates, projected to increase further, has direct implications for maternal-infant health. India, with a substantial rise in cesarean deliveries over the past decade, is no exception. Data gathered by the Union Ministry of Health and Family Welfare under the Health Management Information System (HMIS) indicates that more than 14% of all births in 2018–19 occurred in public hospitals via C-section, or around 19 lakh births out of a total of 1.3 crore births [10]. The state of Madhya Pradesh, sixth most populated state in India. has been recognized as an Empowered Action Group state due to its low socioeconomic

development status, grapples with significant variations in cesarean delivery rates across districts. Understanding these regional variations is crucial, especially in light of the state's high maternal mortality rate which was 173 per 100,000 live births and sadly third highest in the nation between 2018 and 2020 [11].

Table 1.1: Caesarean delivery data in India vs. Madhya Pradesh:

NFHS-5 (2019–2021)	India	Madhya Pradesh
Institutional births (%)	88.6	90.7
Institutional births in public facility (%)	61.9	80.2
Births by cesarean delivery (%)	21.5	12.1
Births in a private health facility that were by cesarean delivery (%)	47.4	52.3
Births in a public health facility that were by cesarean delivery (%)	14.3	8.2

Geographical distribution of cesarean delivery rates in the districts of MP in 2018-2019:

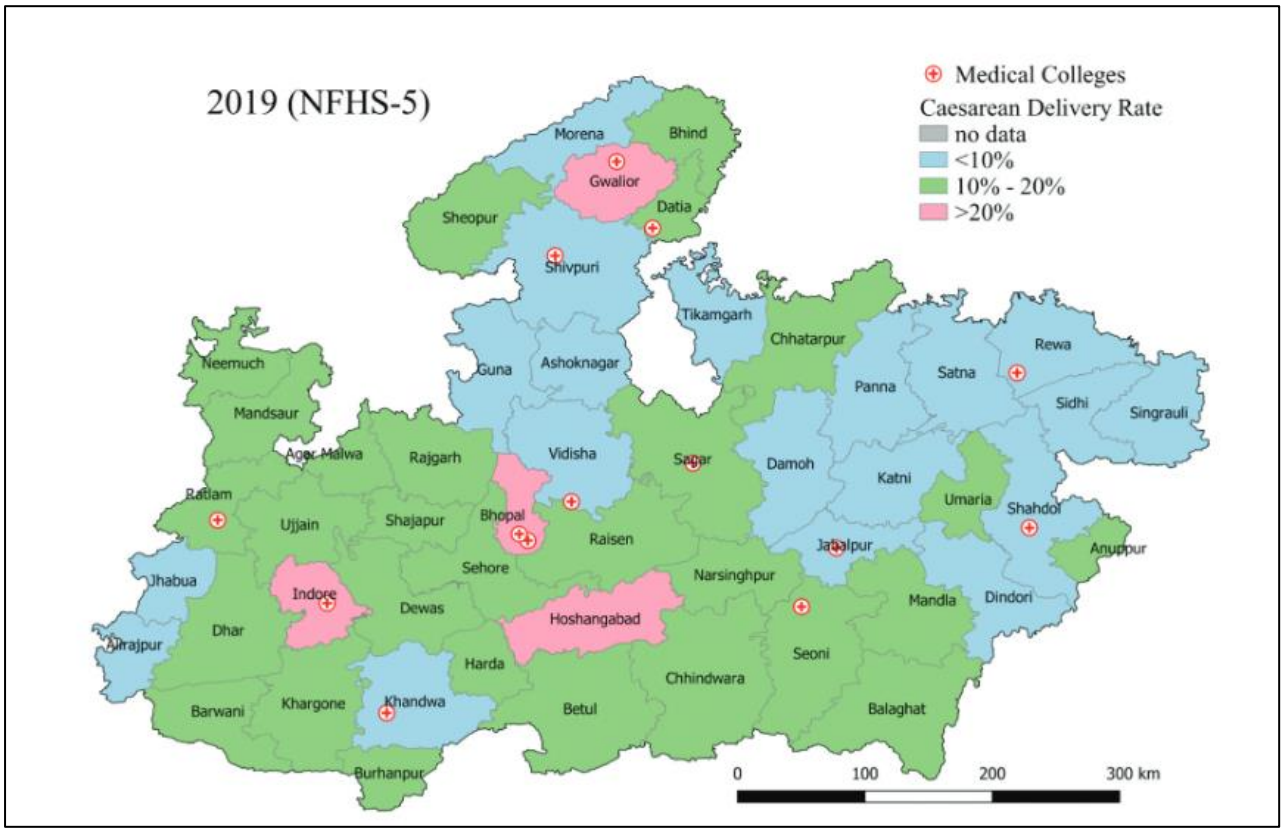


Fig: 1.1. Geographical distribution of cesarean delivery rates in the districts of MP in 2018-2019

Breastfeeding rates in India showcase both progress and challenges. While there has been an increase in exclusive breastfeeding percentages from 46.4% in 2006 to 54.9% in 2016, disparities persist. The promotion of early breastfeeding initiation to 90% by 2025 aligns with global targets, emphasizing the need for sustained efforts to overcome barriers, particularly following cesarean sections. An advocated approach, supported by demonstrated benefits in reducing risks of morbidity and mortality during the initial six months of life, involves the exclusive practice of breastfeeding throughout the early stages of infancy especially first six months following delivery and for up to two years thereafter [4,12.]

Nursing self-efficacy i.e. woman's confidence in her capacity to breastfeed, is a key factor in breastfeeding initiation and maintenance that underscores the psychological dimension of breastfeeding. The psychological benefits for both mothers and newborns contribute to a sense of fulfilment, cooperation, and involvement. However, challenges such as insufficient breast milk can arise, necessitating supportive interventions [13,14]. Mothers who have had a cesarean delivery, however, face challenges such pain, discomfort, exercise intolerance, delayed lactation initiation, and exhaustion. One narrative review finds that in the postpartum phase, mothers encounter increased discomfort, difficulties nursing, worse sleep quality and comfort, anxiety, delayed healing, and longer hospital stays. During the post-CS phase, mothers mostly struggle with nursing and personal nutrition. Among moms with CS, pain, difficulties nursing, mood shifts, mobilization, and poor personal cleanliness were listed as the main issues [2]. These difficulties lead to insufficient supply of breast milk, which impacts the newborn's general health and nutrition[15]. Making sure breastfeeding starts during the first hour of life might potentially cut infant mortality by as much as 22%. Ineffective breastfeeding is linked to a decline in mother identity as well as guilt sentiments [16].

As the rate of cesarean deliveries continues to rise globally, the exploration of interventions that can positively influence breastfeeding outcomes becomes an imperative research pursuit.

The effects of LSCS on breastfeeding are not confined to the immediate postoperative period; they can echo through the entire breastfeeding journey, influencing the establishment of lactation, infant feeding behaviours, and the overall maternal-infant bond [17.] Nonpharmacological therapies, including as skin-to-skin contact, nursing within an hour of delivery, and frequent breastfeeding during the first 24 hours after birth, are frequently used. Adequate milk supply is crucial throughout the first several weeks postpartum.To increase the amount of breast milk produced, oral galactagogues—substances that encourage milk production—may be utilized. Native to the Indian subcontinent, shatavari (Asparagus racemosus) is also referred to as "wild asparagus" and is utilized in Ayurvedic treatment. It is included in the official ayurvedic pharmacopeia and has a long history of usage in India as a galactagogue [18]. Reflexology, a non-pharmacological and non-mechanical technique, emerges as a promising avenue for enhancing breastfeeding outcomes [19,20]. It is a therapeutic approach rooted in the strategic application of touch and massage techniques to specific areas of the body, however, its application in routine care requires a meticulous exploration of its effects within the specific context of postnatal women recovering from LSCS.

Studies indicate that reflexology promotes breastfeeding, alleviates postpartum discomfort, and initiates lactation earlier, particularly in women who undergo cesarean sections. The simplicity and cost-effectiveness of reflexology make it a valuable complement to routine lactation education [21,22,23].

Childbirth through Lower Segment Cesarean Section (LSCS) is a common occurrence in contemporary obstetric practices. Despite the routine nature of the procedure, it is crucial to explore the potential impact of reflex zone stimulation on breastfeeding efficacy among postnatal women who have undergone LSCS. Embarking on this exploration into the intersection of cesarean sections, reflex zone stimulation, and breastfeeding efficacy, the researcher aims to unravel not only the challenges faced by postnatal women but also the

potential of reflexology as a supportive intervention [12]. This study seeks to contribute to the evolving landscape of postnatal care, enriching our understanding of how reflex zone stimulation can empower women on their breastfeeding journey. In the spirit of nurturing motherhood, this study endeavours to illuminate a path that transcends challenges, fostering a holistic and empowering postnatal experience for women recovering from caesarean sections.

NEED AND JUSTIFICATION

Caesarean section has become a prevalent surgical procedure in obstetrics and gynaecology, experiencing a significant 2-3-fold increase in incidence over the last decade. A cross-sectional study uses data from the National Family Health Survey to assess the association of public vs private sector health facilities with the increase in cesarean delivery rates and to estimate the avoidable burden of cesarean deliveries in India between 2005 and 2016. In this study 217 976 births at public and private sector institutions in India between 2005 and 2016, the likelihood of having a cesarean delivery in a private facility more than doubled over the period examined[24].

In tandem with the surge in caesarean section rates, breastfeeding practices emerge as a critical concern. Breastfeeding, a natural and fundamental human activity, is recommended by the World Health Organization (WHO) to be exclusive for the first six months, followed by supplementation up to a year. However, despite these guidelines, research findings indicate a significant gap in early postpartum breastfeeding rates. While initiation stands at 75%, there is a noticeable decline to 43% at six months and a further drop to 22.2% at twelve months [25]. Various factors contribute to the challenges faced by mothers in breastfeeding, including stress, fatigue, anxiety, unfounded fears, and medical interventions such as anaesthesia, strong sedation, prolonged labour, surgical procedures, and placenta retention. These factors not only impact the initiation of breastfeeding but also pose risks of lactation failure. The implications

of these challenges are far-reaching, affecting not only the health of the newborn but also maternal well-being [26].

Breast milk, often regarded as the natural first food for infants, offers a comprehensive array of nutrients crucial for the initial months and beyond. Beyond nutrition, breastfeeding plays a pivotal role in sensory and cognitive development, providing protection against infectious and chronic diseases. The gravity of suboptimal breastfeeding is underscored by a global risk assessment, revealing significant fractions of deaths and years of life lost in developing countries due to the lack of breastfeeding. Notably as many as 1.45 million lives (117 million years of life) are lost due to suboptimal breast-feeding in developing countries [12.]

Initiating breastfeeding within the first hour after birth has been identified as a crucial factor in reducing neonatal mortality. However, following a caesarean birth, mothers encounter impediments such as pain, discomfort, activity intolerance, delayed lactation onset, and fatigue. These challenges contribute to inadequate breast milk supply, affecting the newborn's nutrition and overall health. As much as 22% of all neonatal mortality could potentially be reduced by ensuring the initiation of breastfeeding within the first hour [29].

Immediately after caesarean birth, women encounter breastfeeding challenges such as pain, discomfort, activity intolerance, delayed onset of lactation, and fatigue. These challenges contribute to insufficient breast milk supply, impacting the newborn's nourishment. In the context of escalating caesarean section rates and the persistent challenges in breastfeeding initiation and maintenance, there arises an urgent need for interventions that can address these issues comprehensively. Research evidences highlight the significance of developing strategies to enhance breastfeeding practices, especially in the post-caesarean care scenario [27].

The encouragement of non-pharmacological methods, specifically reflex zone stimulation, presents a novel approach to address these challenges, offering a potential solution to enhance

post-caesarean recovery and patient comfort.[1] Researches reveal positive outcomes linked to reflexology, including improved breastfeeding initiation, easing of postpartum discomfort, and early lactation onset, particularly in women who have undergone caesarean sections [17]. Despite the growing body of evidence supporting the efficacy of reflex zone stimulation, there remains a gap in its integration into mainstream post-caesarean care practices. This underscores the novelty and importance of our study. AIIMS Bhopal, as a hub for medical advancement and patient-centric research, is ideally positioned to explore the untapped potential of reflexology in the post-caesarean care continuum [29].

This research seeks to address the critical need for innovative interventions that bridge the gap between rising caesarean section rates and the challenges in breastfeeding initiation and maintenance. By focusing on reflex zone stimulation, we aim to contribute novel insights to maternal healthcare practices, potentially revolutionizing the post-caesarean care landscape[22]. Through rigorous examination and evidence-based findings, our study aspires to pave the way for the integration of reflexology as a standard and effective practice in post-caesarean care, fostering not only physical recovery but also empowering women on their breastfeeding journey.

STATEMENT OF THE PROBLEM

Effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS in AIIMS Bhopal.

RESEARCH QUESTIONS

• Is there any difference in breast feeding efficacy after administering reflex zone stimulation among postnatal women with LSCS?

• Is there any association of breast-feeding efficacy with selected socio demographic variables among postnatal women with LSCS?

OBJECTIVES

1. To assess the existing level of breastfeeding efficacy among postnatal women with LSCS.
2. To compare the breastfeeding efficacy among postnatal women with LSCS in the interventional and control group.
3. To find out the association of breastfeeding efficacy with socio demographic and clinical variables.

HYPOTHESIS

H0: There is no significant difference in breast-feeding efficacy among postnatal women with LSCS in the interventional and control group after implementation of Reflex Zone Stimulation at 0.05 level of significance.

H1: There is a significant difference in breast-feeding efficacy among postnatal women with LSCS in the interventional and control group after implementation of Reflex Zone Stimulation at 0.05 level if significance.

OPERATIONAL DEFINITION

Effect: It refers to the extent to which reflex zone stimulation (foot reflexology) brings changes in breastfeeding efficacy scores among postnatal women with LSCS

Reflex Zone Stimulation: Refers to a structured and supervised program that involves manual application of pressure or massage techniques to the feet of post-natal women with the intention of triggering physiological responses that may influence breastfeeding. It was administered for a duration of 30 min (10 min each foot) twice in a day for a period of 5 days among postnatal women with LSCS.

Breast Feeding Efficacy: It refers to a measure of the mother's ability to successfully breastfeed her infant, and includes factors such as maternal comfort, good latching of the baby, breast and nipple comfort during breastfeeding as assessed by the LATCH scale and (PPCQ) postpartum comfort questionnaire.

Postnatal Women With LSCS: In the context of this study, it specifically applies to women who have undergone a caesarean section in the lower segment of the uterus and are in the early stages (6-24 hr) of the postpartum period and admitted at OBG HDU ICU/Gynaecology wards of AIIMS Bhopal.

ASSUMPTION:

Postnatal women with LSCS may face some problem in the initiation of Breastfeeding and maintenance of lactation.

Participants will provide accurate and reliable information regarding their breastfeeding experiences.

CONCEPTUAL FRAMEWORK:

Conceptual framework acts as a building block for a research study so as to make findings more meaningful and generalised which provides a framework of reference for practice, research and education. The conceptual framework used for the present study was based on Ernestine Wiedenbach prescriptive theory- The helping art of clinical nursing. The prescriptive

theory conceptualizes both a desired situation and perception and it directs action towards goals.

Wiedenbach identifies four main elements of clinical nursing. They are philosophy, purpose, practice, and the art. The nurse's philosophy is his or her attitude and belief about life and how that attitude affected his or her reality. A nurse's purpose is all the activities directed toward the overall good of the patient. The practice of nursing is the observable actions that are affected by the nurse's beliefs and feelings about meeting the patient's need for help. The art of nursing includes understanding a patient's needs and concerns, developing goals and actions intended to enhance a patient's ability, and directing the activities related to the medical plan to improve the patient's condition.

Within the prescriptive theory, it is based on three factors: the central purpose, prescription and realities.

- **The Central purpose**

  The central purpose is which nurse recognizes as essential to the particular discipline.

  In this study, it refers to improving breastfeeding efficacy which involves improvement of comfort and lactation.

- **The Prescriptions**

  Prescription is for the accomplishment of the central purpose.

  In this study, prescription is implementation of the intervention i.e. Reflex Zone stimulation for 30 min.

- **Realities**

  Realities are the immediate situation that influences the fulfilment of central purpose.

  In this study, the nurse investigator determines the central purpose and has developed the prescription, she considers the following realities:

- **Agent-** The nurse investigator as an agent to perform the nursing action.

- **Recipient-** The postnatal women with LSCS admitted in OBG HDU ICU & Gynae ward.
- **Goal-** The directed goal of nurse investigator improving the breastfeeding efficacy in Postnatal women with LSCS by giving reflex zone stimulation.
- **Means -** The means refers to application of reflex zone stimulation on foot for 30 min, 15 min in each foot.
- **Setting/Framework-** The setting refers to OBS HDU of AIIMS Bhopal. Action was taken through the Identification, Ministration and Validation.

➢ **Identification**

In this study, identification is Screening and pretest assessment of existing level of breastfeeding efficacy among postnatal women with LSCS.

➢ **Ministration**

In this study, ministration is the administration of Reflex Zone stimulation on foot for 30 min, 15 min each foot.

➢ **Validation**

In this study, validation is the post-test assessment of Breastfeeding efficacy among postnatal women with LSCS.

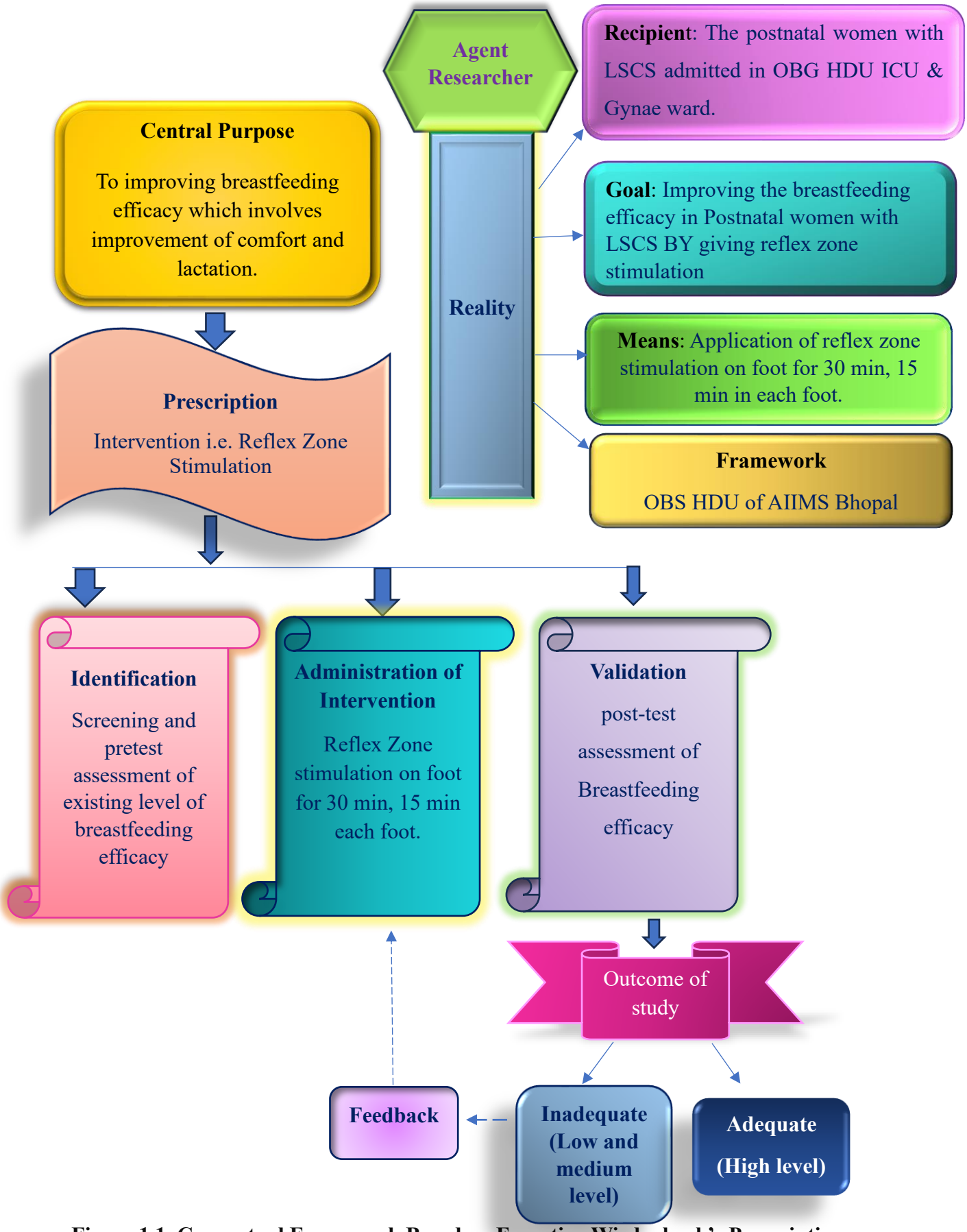

Agent
Researcher
Recipient: The postnatal women with LSCS admitted in OBG HDU ICU & Gynae ward.
Central Purpose
To improving breastfeeding efficacy which involves improvement of comfort and lactation.
Reality
Goal: Improving the breastfeeding efficacy in Postnatal women with LSCS BY giving reflex zone stimulation
Means: Application of reflex zone stimulation on foot for 30 min, 15 min in each foot.
Framework
OBS HDU of AIIMS Bhopal
Prescription
Intervention i.e. Reflex Zone Stimulation
Identification
Screening and pretest assessment of existing level of breastfeeding efficacy
Administration of Intervention
Reflex Zone stimulation on foot for 30 min, 15 min each foot.
Validation
post-test assessment of Breastfeeding efficacy
Outcome of study
Feedback
Inadequate (Low and medium level)
Adequate (High level)

Figure 1.1. Conceptual Framework Based on Ernestine Wiedenbach's Prescriptive Theory- The Helping Art of Clinical Nursing

SUMMARY

This chapter introduces the research focus on the effect of reflex zone stimulation on breastfeeding efficacy among postnatal women with LSCS. The background highlights the significance of exploring this area, and the need and justification emphasize the relevance of the study in the context of contemporary obstetric practices. The statement of the problem defines the central issue, followed by research questions, objectives, hypothesis, operational definitions, assumptions, and the conceptual framework. This sets the stage for the subsequent chapters, where the methodology, literature review, and findings will be explored in detail.

CHAPTER-II

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

The literature review is a comprehensive examination of existing knowledge on a specific research topic, providing critical insights into established findings. By summarizing key points from various studies, a literature review facilitates a connection between the current investigation and previous research, laying the groundwork for the study and inspiring novel research directions.

A literature review serves as the bedrock for understanding the current state of knowledge on a subject, offering a contextual background and rationale for undertaking new studies. It plays a pivotal role in shaping the study's foundation and generating fresh research ideas.

SEARCH STRATEGY

The literature review utilized both online and offline sources, including reputable databases such as PubMed, Scopus, ResearchGate, and Google Scholar. Additionally, journals, books, and unpublished articles were considered in the search. The key search terms employed were: reflexology, reflex zone stimulation, breastfeeding efficacy, pain, and postpartum comfort. Boolean operators (AND, OR, NOT) were used to refine the search results.

The literature is categorized into the following sections for a comprehensive review:

2.1.Literature related to Reflexology

2.2.Literature related to Reflex Zone Stimulation and its benefits

2.3.Reflex Zone Stimulation and Breastfeeding Efficacy

2.3.1. Literature on Reflex Zone Stimulation and Postpartum Comfort

2.3.2. Literature on Reflex Zone Stimulation and Lactation

2.1. Literature related to Reflexology:

Reflexology is an ancient therapy that was utilized by the early Chinese, Egyptians, and North American innate tribes for healing, but it was not until the 19th century that the medical community, nursing, and complementary and alternative medicine (CAM) practitioners began to investigate it scientifically[31]. The main theoretical basis of reflexology is centered around the idea that all areas of the body are mapped onto areas of the feet and hands. Reflexology was developed from 'Zone therapy'- first theorised by the American physician William Fitzgerald within early twentieth century. Fitzgerald suggested that the body could be divided into ten vertical and equal zones. Theorising that manipulation and pressure techniques conducted on the periphery of these zones in the feet and hands could have an effect on physio-pathological conditions elsewhere in the same vertical zones[32]. Reflexology is also known as regional therapy and reflex massage therapy. Its principle is that each area of the hands and feet represents each part of the body, such as the heart, liver, spleen, lungs, kidneys, and other internal organs, and when various areas of the hands and feet are massaged, it can stimulate energy, blood, nutrition, or nerves, resulting in therapeutic effects, including relieving mental stress, detoxifying the body, promoting blood circulation, losing weight, delaying aging, and improving internal health. As shown in figure[31].

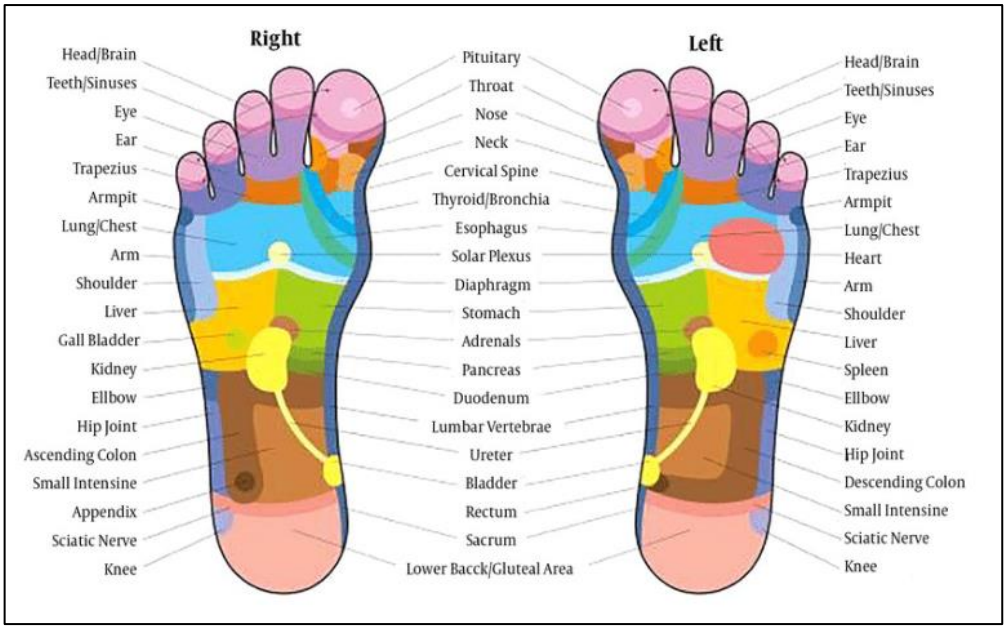


Fig.2.1. Foot Reflexology Chart

Reflexology is the methodical practice of applying some pressure to specific points on the feet and hands to impact the wellbeing of related parts of the body. Each pressure point acts as a sensor on the feet and hands and is connected with specific parts of the body. These sensors will be stimulated by applying the reflexology technique to improve blood and energy circulation, giving a sense of relaxation and maintaining homeostasis[33]. The pressure sensors in the feet communicate right away with the brain, internal organs, and other parts of the body, allowing us to remove ourselves from danger. if necessary, pressure on the feet tells the brain that the jogger is running. Reflexology is weightless jogging exercising similar pressure receptors without the demands of standing and weight-bearing. The modern tactile encounters of reflexology's pressure procedures provoke a general relaxation response in the whole body. Reflexology work influences the body in three primary ways: a general relaxation response, a specific reflex effect, and rejuvenation of the hands and feet. It also improves the flexibility of the hands and feet and makes a difference in creating mindfulness, thus lessening the possibility of injury occurring. In sum, reflexology works as a stress reducer in the nervous system,

prompting an impact on the whole body. In zone theory, the body is divided into ten zones, one representing each finger and toe. Applying pressure to one part of a zone creates an effect along the zone[31,32].

2.2. Literature related to Reflex Zone Stimulation and its benefits:

On the physical, emotional, and spiritual levels, reflexology often improves individuals' physical health and well-being. Briefly, people choose reflexology because it does not use any drugs or chemicals and is the leading choice for numerous well-being issues. It can reduce pain, help maintain physical flexibility and athleticism, relax the limbs, especially the hands and feet, and the whole body, and stimulate the body to release pain-relieving chemicals, It can be utilized as a implies of preventing disease, promoting recovery from physical injury, especially for the hands and feet. It triggers the release of endorphins and enkephalins, which help relieve pain and improve mental energy and well-being.

Foot reflexology is one of the methods used by complementary and alternative medicine in medical treatment, and it differs from general foot massage as it targets the reflex zones of the feet corresponding to the body part more deeply. Foot reflexology has been trained and certified by professional foot reflexologists as researchers and it is commonly used in medical institutions as adjunctive therapy in an attempt to relieve pain or improve sleep when nurses are caring for patients. Most clinical studies have found foot reflexology to be effective in reducing pain, including headache pain, back pain, joint pain, cesarean pain, acute pain in infants, pregnancy pain, labor pain, leg edema in pregnancy, postpartum women's fatigue, pain from surgical medical examinations, organ removal or transplant pain, and various cancer pains. It can also be used as a treatment for individual musculoskeletal cases. In addition, foot reflexology is also an effective treatment for strokes, insomnia, asthma, diabetes, premenstrual syndrome, dementia, cancers, multiple sclerosis, and idiopathic detrusor overactivity. It has also been studied for use in hospice units to alleviate discomfort and pain in patients at the

end of life. In fact, there are many studies exploring reflexology on the quality of life with cancer[33,34].

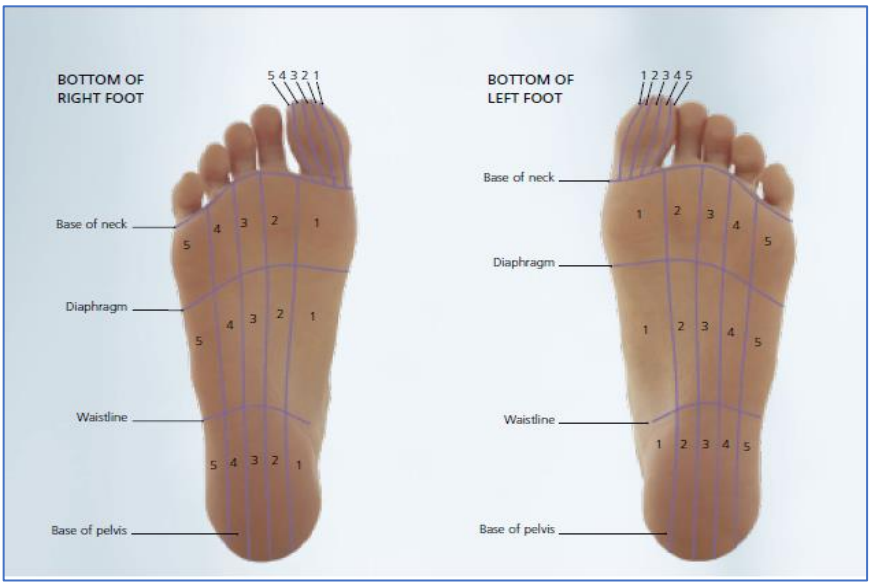


Fig. 3.2. Zones of foot

A comprehensive analysis done in Malaysia sought to reassess the principles of reflexology, exploring its efficacy, methodologies, and training protocols for practitioners. This scrutiny utilized prominent databases such as PubMed, SCOPUS, Google Scholar, and SpringerLink, employing medical subject headings and keywords like foot massage, reflexology, foot reflex therapy, reflexological treatment, and zone therapy. The review encompassed articles published within the last decade. Despite prior systematic reviews failing to yield concrete evidence supporting reflexology's specific effects on various conditions, its widespread acceptance and anecdotal evidence of positive impacts on diverse health conditions persist. The non-invasive and non-pharmacological nature of reflexology adds to its appeal. However, the review emphasizes the essential need for comprehensive training for practitioners to ensure the consistent delivery of services [33,34,35,36.]

In 2018, a comprehensive nursing review in Egypt, offered insights into reflexology. The study delineates reflexology as an exploration of how specific body parts interrelate.

Reflexology practitioners rely on maps of reflexes on the feet and hands, connecting to internal organs and various body parts. The belief is that by applying precise pressure and massaging specific points on the extremities, energy and rejuvenation can be directed to corresponding body areas. The study underscores reflexology's widespread acceptance due to its non-invasive, non-pharmacological complementary nature. Anecdotal evidence supports its positive effects on a variety of health conditions. The review emphasizes the crucial necessity for practitioners to undergo adequate training, ensuring the consistent and proficient delivery of reflexology services [35].

A systematic review focusing on the physiological and therapeutic effects of reflexology in Iran was conducted. The researchers conducted searches using keywords such as "reflexology massage," "reflexology," and "foot reflexology" across PubMed, Google Scholar, and SID databases. A total of 46 articles were thoroughly reviewed. The review concluded that the studies demonstrated positive effects of reflexology on various diseases and disorders. While reflexology cannot be regarded as a substitute for conventional treatments, it was identified as a viable alternative therapy offering a relaxing and rewarding experience. The authors recommend future studies to employ more precise sampling methods, larger sample sizes, and adherence to CONSORT principles for improved research robustness and reliability[36].

2.3.1. Literature related to reflex zone stimulation and lactation

A Quasi-experimental study was conducted in 2023 on 100 primipara post-caesarean mothers in Egypt. The primary aim of the study was to assess the impact of reflexology on postpartum lactation. The findings indicated that breastfeeding satisfaction in the experimental group surpassed that of the control group significantly. As a result, the study concluded that reflexology proves to be an effective technique, enhancing postpartum

comfort, promoting earlier lactation, and providing support for breastfeeding in primiparous mothers who had undergone cesarean deliveries [37].

In 2019, a non-randomized controlled clinical trial was carried out to investigate the impact of hand and foot massage on the intensity of post-caesarean pain and the initiation of breastfeeding. The study's findings led to the conclusion that employing foot and hand massage as a nursing intervention could prove to be a cost-effective, safe, novel, and independent approach. This intervention demonstrated effectiveness in reducing post-cesarean pain intensity and facilitating early initiation of breastfeeding, thereby enhancing the overall quality of women's post-cesarean experiences. As a result, the study advocates for encouraging this non-medical approach within obstetric practice[38].

In 2017, a randomized clinical trial involving 30 mothers with premature infants was conducted. The study employed a three-day intervention, where the intervention group received foot reflexology massage for 20 minutes each day, while the control group received routine care only. Milk volume measurements were taken before and 30 minutes after the massage on the first and third days. The study results indicated that there was no significant difference in the mean volume of milk on the first day after reflex massage between the intervention group and the control group. However, on the third day, a notable difference in the mean volume of milk after reflex massage emerged between the two groups. Consequently, the study concludes that reflexology massage does not exhibit a significant impact on milk production in mothers with premature infants [39].

A narrative review to identify relevant studies conducted in 2023. The researchers systematically searched various databases, including Google Scholar, PubMed, Science Direct, Proquest, Magiran, SID, Scopus, ResearchGate, and Elsevier. They employed keywords such as acupressure, milk volume, premature infant, neonatal intensive care

unit, and their combinations using AND and OR operators in both Persian and English languages. The review spanned from 2010 to 2023. The findings of the study revealed that acupressure exhibits effectiveness in enhancing the volume of breast milk. Importantly, all the studies reviewed in this narrative review consistently indicated the positive impact of acupressure on breast milk volume, with variations observed only in the degree of effectiveness[40].

A quasi-experimental study was conducted in 2023 to investigate the impact of foot reflexology on incisional pain among lower-segment Caesarean Section (LSCS) mothers. The study utilized a Demographic proforma and the Short Form McGill Pain Questionnaire as assessment tools. The experimental group received reflexology for 20 minutes (10 minutes for each foot). The results demonstrated that the mean pain scores in the control group were higher compared to the experimental group following foot reflexology. As a consequence, the study concluded that foot reflexology proves to be an effective non-pharmacological method for alleviating incisional pain among post-LSCS mothers. The simplicity, cost-effectiveness, and practicality of foot reflexology make it a valuable skill for effectively managing incisional pain in this population[41].

A quasi-experimental study was conducted in 2018 to determine the effect of reflexology on post-cesarean pain where a purposive sample of 70 post-cesarean section women was recruited according to inclusion criteria. Three tools were employed for data collection, including sociodemographic and clinical profile structured interview schedules, the Johansson Pain-O-Meter Scale (JPOM), and a modified version of the Chamber Price Pain Rating Scale (CPPRS). The study revealed that reflexology administered after cesarean section exhibited a notable effect on post-cesarean pain quality. Affective and sensory pain responses, as indicated by the Pain Rating Index rank, were significantly reduced after the intervention. Consequently, the study encourages the endorsement of

reflexology as a beneficial non-medical approach in obstetric practice. The study proposes promoting reflexology as a non-pharmacological approach to address post-cesarean pain and suggests its incorporation into hospital protocols. Additionally, it advises offering comprehensive training to obstetric nurses and midwives to effectively employ reflexology for obstetric purposes, emphasizing its non-intrusive, effective, and easily applicable characteristics. The research advocates for additional studies to replicate the findings on a broader population scale [42].

In 2015, a blind clinical trial was conducted aimed to assess the impact of hand and foot massage on post-caesarean pain and anxiety. The results revealed a significant reduction in pain and anxiety levels in the intervention group immediately, 60, and 90 minutes after the intervention. The study concluded that hand and foot massage is linked to diminished pain and anxiety and can be utilized as a complementary method to alleviate post-caesarean discomfort[43].

In 2014, a randomized control trial was conducted in Mangalore, Karnataka, to investigate the effects of foot reflexology on pain intensity and sleep quality in post-caesarean mothers. The study, involving 60 postnatal mothers from the 1st to the 3rd postoperative day, demonstrated a significant improvement in sleep quality and a reduction in pain intensity following foot reflexology after a cesarean section. The study recommends incorporating such interventions into the nursing curriculum, suggesting training programs and the establishment of a complementary therapy cell at institutions with the introduction of multidisciplinary teams[44].

In 2022, a quasi-experimental study focused on post-caesarean women to examine the impact of foot and hand massage on relieving post-caesarean pain. The study concluded that pain levels significantly decreased in the intervention group immediately, 6, and 8

hours after the intervention. It recommends further research to replicate the current study on a larger sample size of post-caesarean women in different settings to enhance generalization[45].

A systematic review conducted in 2020 focused on non-pharmacological nursing interventions, particularly hands and feet reflexology, associated with postpartum pain. The primary objective of this systematic review was to analyze the duration, timing, and outcomes of hand or foot reflexology in mitigating maternal postpartum pain. The study's conclusion supports the recommendation that hand or foot reflexology is effective in reducing pain, specifically postpartum pain[46].

2.3. Literature related to reflex zone stimulation and postpartum comfort:

A single-blind randomized controlled study, conducted in 2023, investigated the impact of foot reflexology on pain, intestinal motility, and postpartum comfort in 70 mothers after cesarean delivery. The study collected data on sociodemographic and obstetric information using a Personal Information Form, Postpartum Comfort Scale (PPCS), Intestinal Motility Monitoring Form, and Visual Analog Scale (VAS). The intervention group received a 30-minute foot reflexology session, with 15 minutes dedicated to each foot, in the third hour after the cesarean section. The findings indicated a decrease in pain levels in the intervention group, although the difference in VAS scores compared to the control group was not statistically significant[47].

A single-blinded, randomized clinical trial in 2022, was conducted to evaluate the impact of deep tissue massage on wound pain, comfort, and breastfeeding in women after cesarean section. The study revealed a highly statistically significant difference in wound pain, comfort, and breastfeeding outcomes between the study and control groups[48].

In 2023, a quasi-experimental study in Egypt to assess the effects of reflexology on postpartum comfort and lactation among primiparous mothers after cesarean delivery. Dividing 100 primiparous post-cesarean delivery mothers into experimental and control groups, the study employed structured Interview Questionnaires, Postpartum Comfort Questionnaires, Breastfeeding Charting Systems, and Visual Analog Scales. The results indicated significantly higher postpartum comfort mean scores in the experimental group compared to the control group. The study recommended the use of reflexology as a non-pharmacological technique during the postpartum period to enhance comfort and encourage earlier breastfeeding in primiparous mothers[49].

Additionally, a descriptive study conducted in Turkey in 2017 aimed to determine the comfort levels of postpartum women after vaginal and cesarean births. The sample consisted of 233 volunteer women, and data were collected using a questionnaire and the Postpartum Comfort Scale (PCS). The study found a statistically significant difference in the average age of women undergoing cesarean delivery compared to those having a vaginal birth, with the former being higher [50.]

Research Gap Analysis

The reviewed literature on reflex zone stimulation, lactation, pain, and postpartum comfort in the context of post-cesarean care provides valuable insights, but a noticeable research gap persists in the integration and exploration of these aspects comprehensively. While individual studies have explored the effects of reflexology, massage, and other non-pharmacological interventions on specific outcomes like pain reduction, lactation improvement, and postpartum comfort, there is a lack of cohesive research that synthesizes these interventions to provide a holistic approach to post-cesarean care. Most studies focus on individual interventions without considering the potential synergies or

cumulative effects that may arise from combining reflex zone stimulation, massage, and other non-pharmacological techniques. Additionally, there seems to be a scarcity of research that addresses the long-term impact of these interventions on maternal well-being and infant health beyond the immediate postpartum period.

Furthermore, the current body of literature predominantly explores the effects of reflex zone stimulation and related interventions on specific outcomes such as lactation, pain, or postpartum comfort in isolation. There is a gap in understanding the intricate interplay between these factors and how they collectively contribute to the overall post-cesarean experience. To bridge this gap, future research could focus on comprehensive intervention strategies that integrate reflexology, massage, and other non-pharmacological approaches. The lack of cohesive research that considers potential synergies and the long-term effects of these interventions calls for future studies to adopt a holistic approach. Bridging this gap could enhance our understanding of effective post-cesarean care strategies, providing valuable insights for healthcare practices and interventions tailored to maternal recovery and infant health. Additionally, there is a need for longitudinal studies that track the sustained effects of t

hese interventions over an extended postpartum period to better inform healthcare practices and interventions for mothers recovering from cesarean sections.

SUMMARY

The literature review presents a comprehensive exploration of reflex zone stimulation, lactation, pain, and postpartum comfort in the context of post-cesarean care. Various studies highlight the efficacy of reflexology, massage, and related non-pharmacological interventions in addressing specific aspects of maternal well-being, such as pain reduction and lactation improvement. However, a research gap is identified in the literature, emphasizing the need for integrated studies that examine the collective impact of these interventions on the overall post-cesarean experience.

CHAPTER-III

METHODOLOGY

CHAPTER III
MATERIALS AND METHODS

Materials and methods provide a critical framework for detailing the research approach, variables (independent and dependent), research settings, population, sample, sampling techniques, and the plan and procedure for data collection, analysis, and presentation.

Research approach

The research approach encompasses the plans and procedures that guide research, from broad assumptions to detailed methods of data collection, analysis, and interpretation. The present study aimed at evaluating the effect of Reflex Zone Stimulation on Breastfeeding efficacy among postnatal women with LSCS. Thus, a quantitative approach was found to be appropriate for the study.

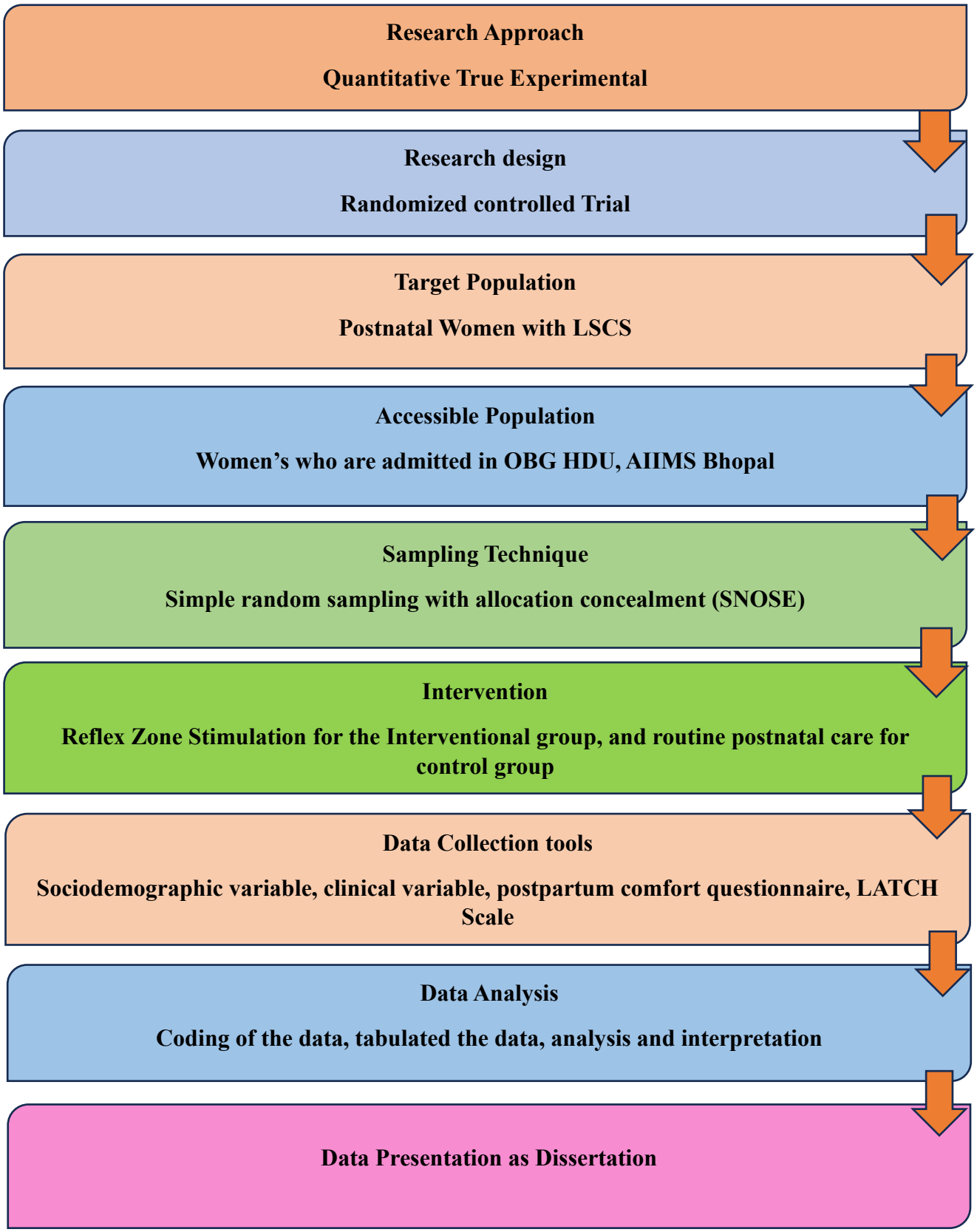
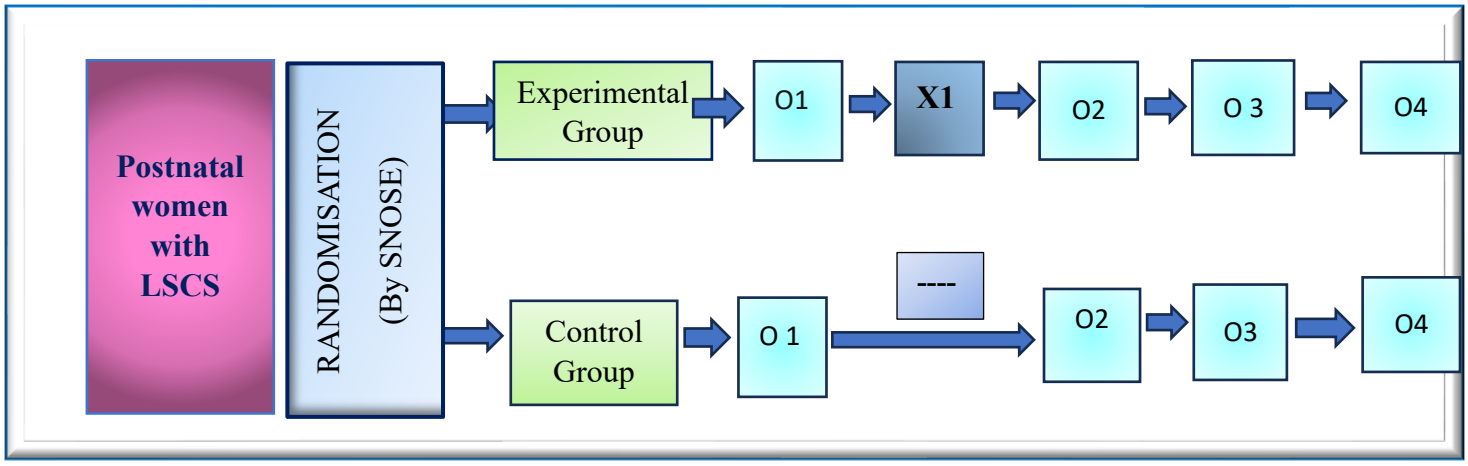

Research Approach
Quantitative True Experimental
Research design
Randomized controlled Trial
Target Population
Postnatal Women with LSCS
Accessible Population
Women's who are admitted in OBG HDU, AIIMS Bhopal
Sampling Technique
Simple random sampling with allocation concealment (SNOSE)
Intervention
Reflex Zone Stimulation for the Interventional group, and routine postnatal care for control group
Data Collection tools
Sociodemographic variable, clinical variable, postpartum comfort questionnaire, LATCH Scale
Data Analysis
Coding of the data, tabulated the data, analysis and interpretation
Data Presentation as Dissertation

Fig 3.1. Schematic flow diagram of the research process

Research Design

Research design acts as a blueprint for the collection, measurement, and analysis of data. The research design refers to the overall strategy that one may choose to integrate the different components of the study coherently and logically to ensure that the research problem is effectively addressed. A Randomized Control Design (pre-test post-test only) was used in this study to ensure a logical and cogent integration of study components to successfully address the research topic.



Where, X1 = Intervention (Reflex zone stimulation), ----- = (Routine care), O1= Pretest on day 1, O 2= Post test on day 1, O 3= Post test on day 3, O 4= Post test on day 5

Fig 3.2. Schematic representation of research design

3. A. VARIABLES UNDER STUDY: Variables are characteristics or attributes of a person or object that can change or vary and are manipulated in research.

Dependent and Independent variable- In this study, the independent variable refers to Reflex zone stimulation intervention and the dependent variable refers to Breastfeeding efficacy.

Attribute Variables: Attribute variables are characteristics or attributes of individuals or objects in a study that are being measured or observed. These variables provide essential information about the participants or subjects and contribute to the overall understanding of the research context These variables are critical for characterizing the study population, understanding their characteristics, and exploring potential relationships between these attributes and the research outcomes. Variables are characteristics or attributes of a person or object that can vary. The demographic and clinical variables include age, religion, educational status, employment status, residence, duration of marriage, type of diet, type of family, socioeconomic status and number of antenatal visits, type of pregnancy, order of current pregnancy, gestational age, no of living children, age of children, Indication of LSCS, initiation of breastfeeding, type of feeding, gender of baby, birth weight of the baby, abortion history, infertility history.

3.B. RESEARCH SETTINGS

The research setting can be the physical, social, and cultural site where the researcher conducts the study. The present study was conducted at the Obstetrics High Dependency Unit (OBS HDU) of AIIMS Bhopal where postnatal women with LSCS are admitted after delivery.

3.C. POPULATION: Population can be defined as a group of individuals, items, or objects from which samples are taken from measurement.

Target population: The target population is the population into which the researcher would like to generalize his or her results. In this study, the target population comprised postnatal women with LSCS Bhopal.

Accessible population: It is the aggregate of all cases that confirm to the designated criteria and that are accessible to the researcher as a pool of subjects for the study. In the present study, it refers specifically to postnatal LSCS women admitted at AIIMS Bhopal.

3.D. SAMPLE:

Implies to the unit of the populace judiciously chosen to participate in the scientific inquiry. A sample of 80 postnatal pregnant with LSCS at AIIMS Bhopal was selected based on specific sampling criteria.

Sampling criteria: Sampling criteria is the list of the characteristics essential for inclusion or exclusion in the target population.

Inclusion criteria:

Postnatal women with LSCS who are admitted in OBS HDU/ Gynae ward and are -

- Conscious and oriented.
- Delivered within 6-24 hrs having live baby beside her
- Having intact foot skin.
- Able to read, write, and understand Hindi /English language.
- Willing to participate in this study.

Exclusion criteria:

Postnatal women with LSCS who are**:**

- Having any medical or psychological conditions.
- Having any problem in feet like scar, eczema, edema, varicose vein, open lesion/ injury
- Having their newborn admitted in NICU.
- Using any galactagogue food and medications to enhance breast milk production.
- Using any other complementary therapies like acupuncture to improve lactation.
- Not available during the procedure

Sample size

A sample is a smaller group of subjects drawn from the population in which a given study was conducted for a purpose of drawing conclusions about the population targeted. The formula adopted for sample size estimation at 95% CI and 0.05 L.O.S. in this study is:

$$n = (\sigma_1 + \sigma_2)^2 \frac{(Z_{(1-\alpha)} + Z_{(1-\beta)})^2}{(m_1 - m_2)^2} \quad (51)$$

Where,

α- is the probability of Type-I error, it is also called the level of significance (0.05)

β- is the probability of Type-II error (0.80)

1-β- is called the power of the test.

Z1-α- is the z score for 1-α. (1.64)

Z1-β -is the z score for 1-β. (0.84)

σ1- is the standard deviation of outcome variable in group-1 (1.5)

σ2 -is the standard deviation of outcome variable in group-2. (0.9)

m1 -is the mean of outcome variable in group-1. (7.1)

m2- is the mean of outcome variable in group-2. (6.1)

putting the values we get,[52]

$$\boldsymbol{n} = (\mathbf{1.5} + \mathbf{0.9})^2 \frac{(1.64 + 0.84)2}{(7.1 - 6.1)2}$$

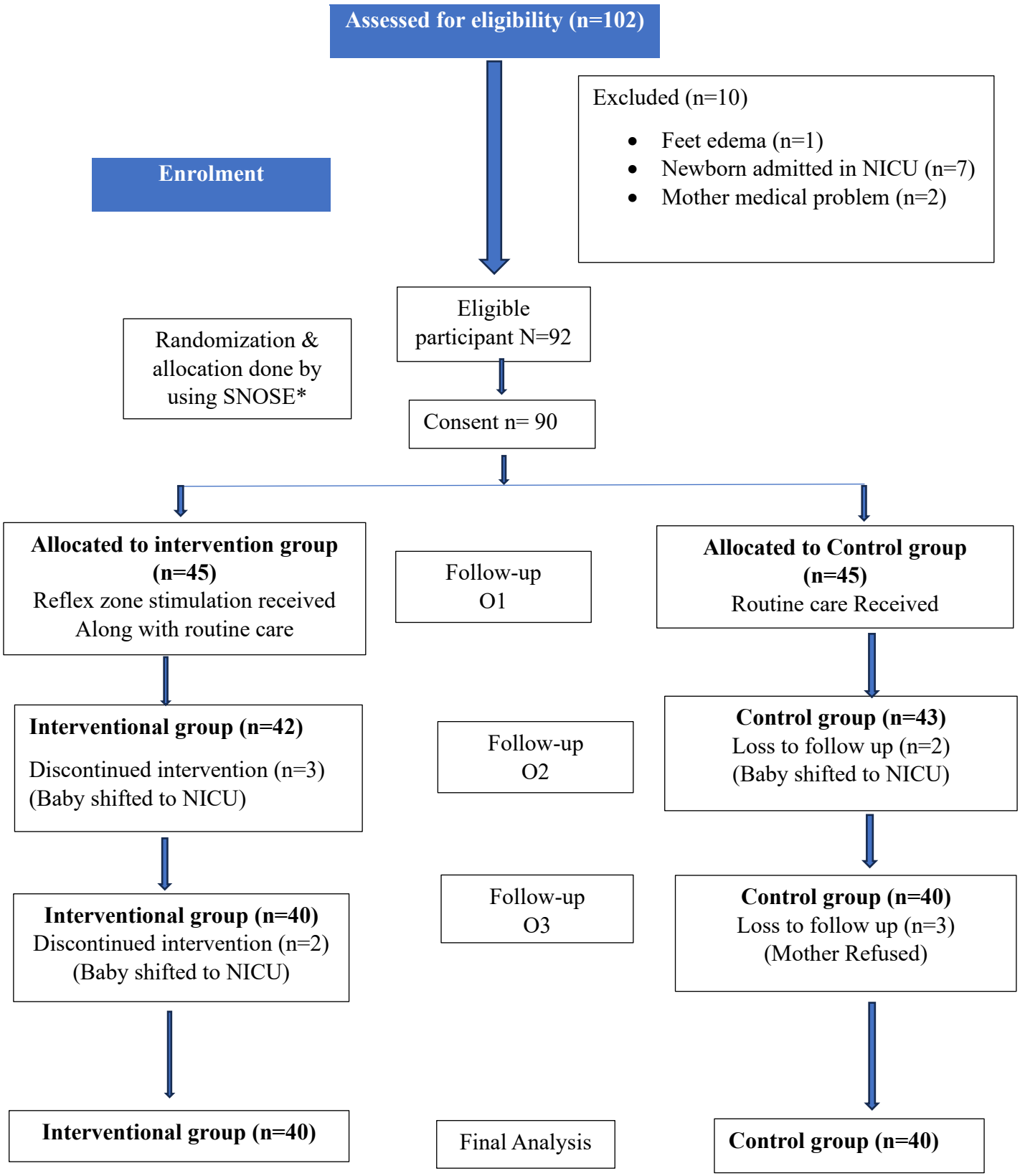
n = **35** (***approx***) + 10% for a response rate 3.5 = **40 Approximately**

Sampling technique

Sampling is known as the process of drawing a representative sample from the population of the study. The present study focused on simple random sampling technique, with respondents chosen based on desirable characteristics and their ability to provide required information.

Randomization

The experimental and control groups were randomized using the SNOSE (sequentially numbered opaque sealed envelope) method. Allocation concealment and single blind were done to minimize the selection bias of the researcher.



(*Sequentially numbered opaque sealed envelope)

Fig.3.3. Sample recruitment process

3.E. DATA COLLECTION TOOL

The most crucial aspect of any research is data collection, which provides information to research questions generated by the researcher in the study. Hence, data collection relies on the tool which is used for the study.

Development of the tool-

Development of the tool- The investigator prepared the tool aligning it with the study's objectives, drawing insights from the literature review and ensuring relevance to clinical practice. The tool was specifically tailored for postnatal women with LSCS within the Obstetrics High Dependency Unit (OBS HDU) at AIIMS Bhopal.

1. A comprehensive examination of existing literature was conducted using various academic sources such as books, national and international journals, and published research papers. This exploration aimed to gather information specifically related to women who underwent cesarean sections and the impact of reflex zone stimulation.

2. The first draft of the research instrument was developed, comprising essential questions designed to establish a correlation between reflex zone stimulation and breastfeeding.

3. Extensive consultations and discussions took place with professionals in the field, including obstetricians, nursing experts, and specialists in yoga and reflexology. Feedback and guidance were sought from both the primary guide and co-guides, leading to adjustments in the tool. The Content Validity Index (CVI) was then determined to enhance the questionnaire's validity.

4. The final draft of the questionnaire was prepared, incorporating revisions based on the received feedback. The content of the questionnaires was thoroughly reviewed and finalized for use in the study.

5. Ethical approval obtained for using the research tool

Description of the tool-

Description of tool:

The research instrument consists of three main sections. Section I is further divided into two parts, namely Part A which focuses on sociodemographic variables, and Part B, which encompasses clinical variables. Section II incorporates the postpartum comfort questionnaire; Section III includes the LATCH scale.

Section I

Part-A- Socio-demographic variable (Annexure)

Sociodemographic variable Collect the background details of postnatal women with LSCS includes 9 variables age, religion, educational status, employment status, residence, duration of marriage, type of diet, type of family, and socioeconomic class according to kuppuswamy scale. Data was collected through the interview technique.

Part -B-Clinical variables (Annexure)

It includes 14 variables, number of antenatal visits during pregnancy, type of pregnancy, order of current pregnancy, gestational age, living children age, indication of LSCS, initiation of breastfeeding, type of feeding to neonate, gender of the baby, birth weight of baby, history of abortion and infertility, nature of pain, site of pain, pain scores. Data was collected through the interview technique.

Section II- Breastfeeding Efficacy Tool (Annexure)

A. Postpartum comfort questionnaire.

B. LATCH Scale

A-Postpartum comfort questionnaire

"Postpartum Comfort Questionnaire" was developed by Karakaplan and Yıldız.The PPCQ evaluates the physical, psycho-spiritual, and sociocultural comfort of mothers after a cesarean section. This questionnaire consists of 34 items with a 5-point Likert-type scale (where 5 indicates the highest level of comfort for each item). The minimum score on the scale is 34, and the maximum is 170. Scores close to 170 indicate a high level of comfort. Data was collected through the interview technique.

B-LATCH scale

The LATCH breastfeeding assessment tool scale was developed by Jenson D, Wallace S, and Kelsey P. This scale consists of 5 components - Latch, Audible swallow, Type of nipple, Comfort, and Hold in which the total score ranges from 0 to 10. The scoring criteria categorize scores as low level (1-3), median level (4-6), and high level (7-10). Data was collected through observation.

3.F. VALIDITY AND RELIABILITY OF THE TOOL

Validity relates to the extent to which the research data as well as the methods for finding the data are accurate, honest, and on target.

3.F.1. Validity

Validity assessment involved establishing both face and content validity. Face validity was determined through discussions with the guide and co-guide. On the other hand, content validity was established using the Scale Content Validity Index (SCVI) based on the average method and based on the universal agreement (UA)method. The self-structured tool, encompassing the Sociodemographic Questionnaire and Clinical Profile, was subjected to evaluation by a panel of 15 experts, comprising 13 Nursing Experts and 2 AYUSH specialists. The final tool contains a total of 9 questions in the sociodemographic sheet and 14 questions in the clinical variable sheet. (Appendices)

Content validation (Appendices)-

Based on the validators' suggestions, modifications were made and the tool was finalized with the consultation with the guide and co-guide. The scale content validity index was calculated.

Table 3.2. Scale Content validity Index values

S.NO	CVI Values	Sociodemographic Questionnaire	Clinical Profile
1.	S-CVI(Ave)	0.98	0.99
2.	S-CVI(UA)	0.99	0.92

Consequently, the Scale Content Validity Index (SCVI) for the final tool Section I socio-demographic & clinical information proforma is as follows: Scale CVI (Based on average method) = 0.98 and Scale CVI (Based on universal agreement (UA)method) = 0.99 for the. For the Clinical Profile, the Scale CVI (Based on the average method) is 0.99, and the Scale CVI (Based on the UA method) is 0.92.

Content validation certificate (Annexure)-

Section II-Postpartum Comfort Questionnaire

The PPCQ scale is a standardized tool with established validity Cronbach Alpha value of.78 (52). In this study, Cronbach's α reliability of this scale was found to be 0.87 for the total PPCQ scores[53].

Permission for PPCQ tool (Annexure)

Section II The LATCH scale is an openly accessible and standardized tool with an established validity of 0.87 (53) In this study, validity was found 0.92[54].

All the tools were translated into Hindi and retranslated back into English.

Certificate for tool translation (Annexure)-

3.F.2. Reliability

Reliability refers to the consistency and accuracy of an instrument with which it measures the target attribute for the purpose it is designed.

The reliability of The LATCH scale assessed by Yenal and Okumuş in Turkey yielded a Cronbach alpha value of 0.95. (references). In the present study, it was 0.97.

Postpartum comfort questionnaire: Cronbach's α reliability of this scale was found to be 0.87 for the total PPCQ scores. In the present study, it was found 0.90.

3.G. DESCRIPTION OF THE INTERVENTION

Introduction

Reflex Zone Stimulation involves the physical application of pressure to the foot, which contains numerous nerve endings representing various organs and systems in the body. This practice aims to restore the natural equilibrium of the body disrupted by physical, mental, and emotional activities, potentially alleviating various health issues.

Reflex Zone Stimulation (RZS) was initiated six hours after cesarean section delivery. The intervention was administered for 30 minutes, twice daily, over five days. Mothers were provided instructions to breastfeed their babies, and the LATCH score was assessed before and after the intervention sessions. The pre-test and post-test scores were categorized as highly Low level, medium level and high level.

Reflex Zone Stimulation Procedure:

Duration: 20 Minutes (10 in each foot)

Set-Up time: 5 Minutes

Turn Over time: 5 Minutes

Materials Required:

Reflexology massage oil, Bed sheet, 2 small towels, 1 bowl, Electric kettle.

Steps of Procedures

To initiate the treatment, it is imperative to wash and sanitize hands thoroughly. Prior to the commencement of the procedure, a check on the water temperature ensures a comfortable and safe experience for the individual. Greet and introduce oneself to the woman. Depending on her comfort, she can be positioned either supine or semi-sitting. Ensure a respectful environment, proper coverage is maintained throughout the procedure. The initial steps are followed by washing the feet with warm water, setting the stage for an effective intervention. communication is carried out in a soft and calm voice. To minimize disruptions, the mother is kindly requested to refrain from talking during the intervention unless absolutely necessary, ensuring a focused and attentive approach to the treatment.

Relaxation techniques:

Warm up legs, feet stretching forward, and backward, and rotation of both legs, pressure point holding, ankle rotation, side to side movement, rotate turn and stretch all toes, lift and stretch and toe rotations, open left leg cover and apply oil.

Post-procedure care:

Wipe the feet with a warm hand towel then inform the women that the treatment is complete. Inquire about the satisfaction of the women with the treatment and offer water to drink after the massage. Then wash hands and record the procedure with date, time, and observations.

Detailed about Reflex point techniques, time duration, function (Annexure)

3.H. ETHICAL CONSIDERATION:

Ethical clearance was taken from the Institutional Human Ethics Committee- Student Research (IHEC-SR) of AIIMS Bhopal (LOP no: AIIMS/BPL/IHECSR/JULY/22/MscN/16).

Administrative permission:

Permission was taken from the principal-Nursing College, and the Medical Superintendent, and notified the Head of respective departments and Senior Nursing Officers of respective departments prior to data collection. Informed consent was taken from the study participants. Participants were assigned code numbers for identification. The confidentiality of the participants was maintained. (Annexure)

Trial registration: This current research study registered under the Clinical Trial Registry of India (CTRI/2023/10/058994) dated 20/10/23. (Annexure)

3. I. PILOT STUDY

A pilot study is a preliminary, small-scale trial aimed at testing the techniques and methods intended for use in a larger-scale study. This pilot study was conducted from 20/10/23 to 30/10/23 adhering to the same objectives, data collection procedures, and analysis techniques outlined in the Letter of Permission (LOP). Following the LOP approval, a total of 10 participants, constituting 10% of the intended sample size, were recruited. Utilizing the SNOSE method, five participants each were randomly assigned to the control and intervention groups.

Conducted within the post-operative obstetric High Dependency Unit (HDU) ward of AIIMS Bhopal, the pilot study spanned 10 days. Simple random sampling was employed to select 10 cesarean mothers, who were then randomly allocated to the experimental and control groups. The pilot study played a crucial role in gauging the feasibility of the larger study and identifying potential challenges that may arise in the future. The pilot study was found to be feasible to conduct the main study.

3.J. DATA COLLECTION PROCESS

The primary investigation aimed to fulfill the objectives outlined in the current study. Following the acquisition of ethical clearance and necessary permissions from competent authorities, data collection commenced from October 21, 2023, to November 21, 2023. All eligible participants meeting the inclusion and exclusion criteria were enlisted. Utilizing the SNOSE method, the experimental and control groups were randomly assigned, with study samples allocated even numbers and the control group receiving odd numbers. Patients were comprehensively briefed about the study, including its potential benefits and risks, and informed written consent was obtained.

Recruitment on a per-week In-Patient Department (IPD) basis involved enlisting 2-3 patients per day in both the intervention and control groups. Socio-demographic and Clinical Variable Questionnaires, the pain scale, and the PPCQ Questionnaire tool were administered through one-on-one interviews as a pre-test before the initiation of the intervention. Each patient's session lasted approximately 45-60 minutes. The intervention was administered over 5 days, with data collection occurring on the 1st, 3rd, and 5th days. Instances where the babies were transferred to the Neonatal Intensive Care Unit (NICU) during data collection the women were considered as dropouts then.

3. K. PLAN FOR DATA ANALYSIS AND INTERPRETATION

The data analysis and interpretation plan involved the formulation of frequency tables for all relevant demographic data. Comprehensive statistical methods, including both descriptive and inferential approaches, are to be employed for data analysis. Descriptive statistics to analyze demographic variables, providing a detailed overview. Kolmogorov Smirnov test is used to check the normality of data.

Additionally, the 't' test is to be utilized to ascertain the impact of reflex zone stimulation on lactation among post-caesarean mothers, facilitating a more in-depth examination of the intervention's effectiveness.

Sl No	Objectives	Statistical test
1	To assess the existing level of breastfeeding efficacy in both experimental and control groups among postnatal women with LSCS.	Frequency, percentage, mean, standard deviation, homogeneity
2	To compare the breastfeeding efficacy (comfort and LATCH) among postnatal women with LSCS in the interventional and control group.	Test of Normality Paired t test, unpaired t test, repeated measures ANOVA.
3	To find out the association of breastfeeding efficacy (comfort and LATCH) with socio-demographic and clinical variables in the experimental group.	Chi-square/ Fisher Exact test

SUMMARY

This chapter focused on the Materials and Methods employed in the research study, presenting a robust framework that outlines the research approach, variables, research design, and the comprehensive plan for data collection, analysis, and presentation. A quantitative approach is justified for the investigation, specifically evaluating the effectiveness of Reflex Zone Stimulation on breastfeeding efficacy among postnatal women with Lower Segment Cesarean Section (LSCS). The chapter delves into the detailed research design, including the adoption of a Randomized Control Design, and provides a schematic representation of the design. The variables under scrutiny

encompass demographic and clinical factors, crucial for a nuanced analysis. The study's settings, population, sample, and sampling techniques are elucidated, emphasizing the meticulous approach to participant selection. The comprehensive description of the research tool, its development, and validation underscore the methodological rigor. Furthermore, the chapter details the intervention process of Reflex Zone Stimulation, delineating the procedures, duration, and materials required. The plan for data analysis and interpretation, involving frequency tables and statistical methods, is presented, laying the groundwork for the subsequent exploration and discussion of research findings.

CHAPTER-IV

RESULT

CHAPTER IV

RESULT

This chapter delves into the comprehensive analysis and interpretation of the data gathered to evaluate the impact of reflex zone stimulation on Breastfeeding Efficacy among Postnatal women with Lower Segment Cesarean Section (LSCS). The assessment employs the LATCH scale, pain scale, and the postpartum comfort questionnaire (PPCQ), encompassing data from 80 mothers, with 40 in the experimental group and 40 in the control group.

As Polit and Hunglar (54) assert, data analysis is a systematic process that involves organizing and synthesizing data to address research questions and test hypotheses. Descriptive and inferential statistics were employed to tabulate, scrutinize, and interpret the acquired data in accordance with the study's overarching goals. The data collected by reseracher underwent meticulous analysis utilizing MS Excel 365 and IBM SPSS Statistics (Version 22), aligning with the predefined objectives of the study.

Organization and presentation of the findings-The presentation of the study findings is structured as follows:

Section I: Sample Characteristics: This section provides an overview of the socio demographic and clinical characteristics of the sampled population.

Section II: Pain Assessment Among Experimental & Control Group: A detailed examination of pain levels is presented, comparing the experimental and control groups.

Section III: Assessment of Breastfeeding Efficacy: The effectiveness of breastfeeding is assessed through the analysis of data gathered using the PPCQ and LATCH scale.

Section IV: Effectiveness of Reflex Zone Stimulation: This section focuses on evaluating the impact and efficacy of reflex zone stimulation on breastfeeding among postnatal women with LSCS.

Section V: Correlation of Pain with Comfort and Breastfeeding Efficacy: The correlation of pain levels with postpartum comfort and breastfeeding efficacy within the experimental group is explored in this section.

Section VI: Association of Breastfeeding Efficacy with Sociodemographic and Clinical Variables: An in-depth analysis to understand the association between breastfeeding efficacy and various sociodemographic and clinical variables in experimental group.

SECTION I: SAMPLE CHARACTERISTICS

This section provides a detailed account of the socio-demographic and clinical attributes of the study participants. The socio-demographical data encompass aspects such as Mother's age, Religion, Educational Status, Employment Status, Residence, Duration of marriage, Type of diet, Type of family, and Socio-economic status. Additionally, clinical data includes information on the number of antenatal visits during pregnancy, Type of pregnancy, Order of current pregnancy, Gestational age (in weeks) at the time of delivery, Number of living children, Indication for LSCS in the current pregnancy, Initiation of breastfeeding, Type of feeding to neonate, Gender of the baby, Birth weight of the baby, History of Abortion, History of Infertility, most common site of pain, and nature of pain.

Table 4.1. Frequency, percentage distribution of socio-demographical variables, and assessment of homogeneity of characteristics between the groups (N=80)

S. N.	Name of variables	Experimental group (n=40)		Control group (n=40)		Chi-square value (df)	P value
		Frequency	Percentage (%)	Frequency	Percentage (%)		
1	**Age (in years)**	27.32 ± 4.457		28.65 ± 4.441		1.33 (78)	0.18*
2	**Religion**						
	Hindu	**40**	**100.0**	**37**	**92.5**	3.117 (1)	0.077
	Muslim	0	0.0	3	7.5		
3	**Educational Status**						
	No Formal Education	0	0.0	0	0.0	6.116 (3)	0.106
	Primary level	11	27.5	4	10.0		
	Secondary level	2	5.0	7	17.5		
	Higher Secondary	**14**	**35.0**	**15**	**37.5**		
	Graduation and above	13	32.5	14	35.0		
4	**Employment Status**						
	Unemployed / Homemaker	**33**	**82.5**	**33**	**82.5**	1.733 (3)	0.630
	Self-Employed	6	15.0	4	10.0		
	Government Employee	1	2.5	2	5.0		
	Private Employee	0	0.0	1	2.5		
5	**Residence**						
	Rural	**23**	**57.5**	**14**	**35.0**	4.073 (1)	0.072
	Urban	17	42.5	26	65.0		

	Semi Urban	0	0.0	0	0.0		
6	**Duration of marriage**						
	< 1 Year	2	5.0	1	2.5	1.091 (3)	0.779
	1 – 3 Year	**17**	**42.5**	**18**	**45.0**		
	3 – 5 Year	10	25.0	13	32.5		
	>5 Year	11	27.5	8	20.0		
7	**Type of diet**						
	Vegetarian	**28**	**70.0**	**20**	**50.0**	3.333 (1)	0.068
	Non-Vegetarian	12	30.0	20	50.0		
8	**Type of family**						
	Nuclear	**20**	**50.0**	**25**	**62.5**	2.581 (1)	0.108
	Joint	17	42.5	8	20.0		
	Extended	3	7.5	7	17.5		
9	**Socio – economic status**						
	Upper (I)	0	0.0	1	2.5	8.153 (4)	0.086
	Upper Middle (II)	4	10.0	13	32.5		
	Lower Middle (III)	**26**	**65.0**	**18**	**45.0**		
	Upper Lower (IV)	9	22.5	6	15.0		
	Lower (V)	1	2.5	2	5.0		

*=t value

Table 4.1 presents the baseline characteristics of socio-demographic variables for participants in both the experimental and control groups. The chi-square values and corresponding p-values assess the homogeneity of characteristics between the experimental and control groups. The p-value greater than 0.05 for all the variables indicate no significant difference between the groups affirming that, at the 0.05 level of significance, the baseline characteristics of both groups were comparable.

Table 4.2. Frequency, percentage distribution of Clinical variables and assessment of homogeneity of characteristics between the groups. (N=80)

S. N.	Name of variables	Experimental group (n= 40)		Control group (n=40)		Chi-square value (df)	P value
		Frequency	Percentage (%)	Frequency	Percentage (%)		
1	No of antenatal visits during pregnancy						
	< 4	12	30	4	10	4.651 (3)	0.199
	5-9	**18**	**45**	**22**	**55**		
	10-15	9	22.5	12	30		
	> 15	1	2.5	2	5		
2	Type of pregnancy						
	Planned	**25**	**62.5**	**27**	**67.5**	0.220 (1)	0.639
	Unplanned	15	37.5	13	32.5		
3	Order of current pregnancy						
	1st	**22**	**55.0**	**18**	**45.0**	4.002 (2)	0.135
	2nd	17	42.5	16	40.0		
	3rd	1	2.5	6	15.0		
	>3	0	0.0	0	0.0		
4	Gestational age (in weeks) at the time of delivery	38.78 ± 1.250		38.78 ± 1.702		0.00 (78)	0.100*
5	Number of living children's						
	One	**23**	**57.5**	**23**	**57.5**	1.230 (2)	0.540
	Two	17	42.5	16	40.0		
	>Two	0	0.0	1	2.5		
6	Indication for LSCS in current pregnancy						
	Absolute indication	14	35.0	2	5.0	0.235 (2)	0.889
	Relative indication	**26**	**65.0**	**38**	**95.0**		

7	Initiation of breast feeding						
	Within 1 hour	**26**	**65.0**	**27**	**67.5**	0.228 (1)	0.633
	1-2 hour	14	35.0	12	30.0		
	> 2 hours.	0	0.0	1	2.5		
8	Gender of the baby						
	Male	**24**	**60.0**	16	40.0	3.200 (1)	0.074
	Female	16	40.0	**24**	**60.0**		
9	Birth weight of the baby (in KG)	2.90 ± 0.443		2.87 ± 0.461		0.29 (78)	0.76*
10	History of Abortion						
	No	**39**	**97.5**	**35**	**87.5**	2.051 (1)	0.152
	Yes	1	2.5	5	12.5		
11	History of Infertility						
	No	**38**	**95.0**	**40**	**100.0**	2.051 (1)	0.152
	Yes	2	5.0	0	100.0		
12	Most common site of pain						
	Incision site	40	100.0	40	100.0	7.593 (8)	0.474
13	Nature of pain						
	Discomforting	3	7.5	2	5.0	9.148 (8)	0.329
	Distressing	1	2.5	2	5.0		
	Excruciating	10	25.0	6	15.0		
	Horrible	**26**	**65.0**	**30**	**75.0**		

*= t value

Table 4.2. provides a detailed overview of the clinical baseline characteristics pertaining to both the experimental and control groups. The calculated p-values (> 0.05) indicate no significant difference between the groups at the 0.05 level of significance.

SECTION II: PAIN ASSESSMENT AMONG EXPERIMENTAL & CONTROL GROUP

This section delineates the outcomes of pain assessment in postpartum women with Lower Segment Cesarean Section (LSCS). The evaluation includes measurements of pain during the

resting stage, at the time of movement, and specifically during breastfeeding.

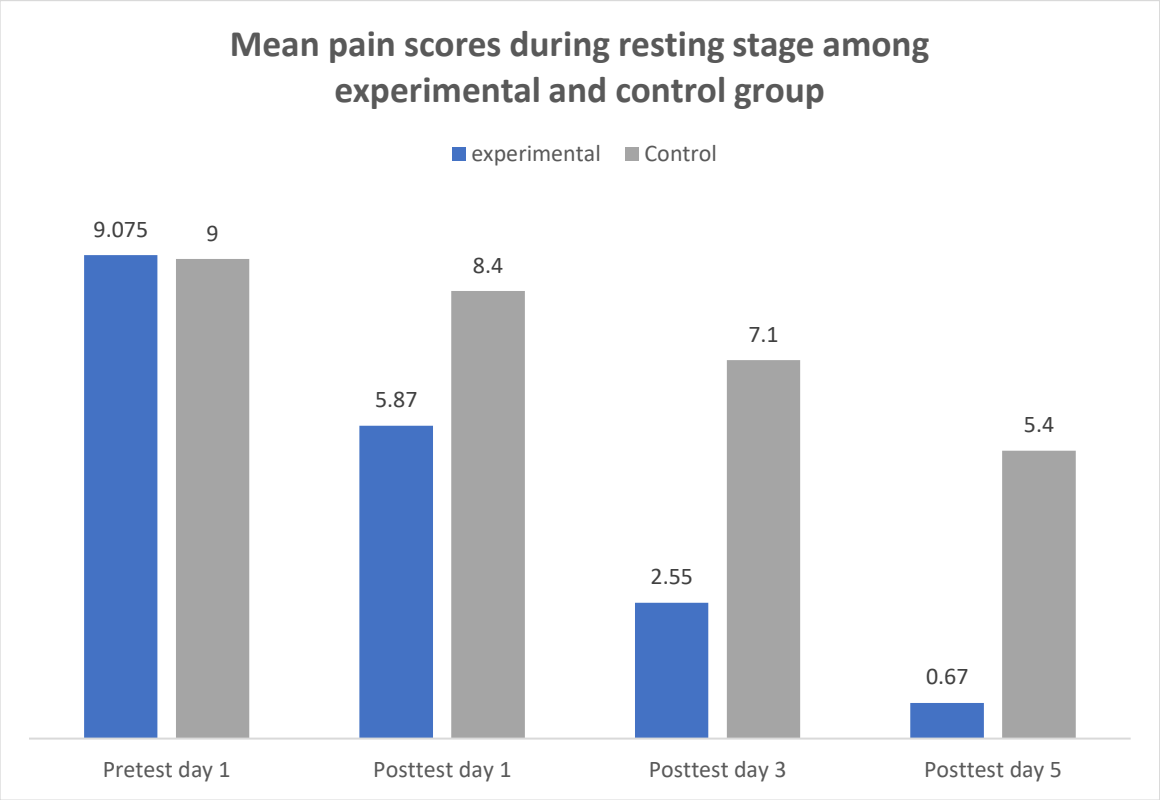


Figure 4.1 Bar diagram showing comparison of Mean pain scores during resting stage

Figure 4.1 illustrates the comparison of mean pain scores between the experimental and control groups during the resting stage. The pre-test results on Day 1 indicate comparable pain levels in both groups. Subsequent observations reveal a distinct difference, with the experimental group reporting a pain score of 0.67 during the resting period, while the control group experienced a pain score of 5.4.

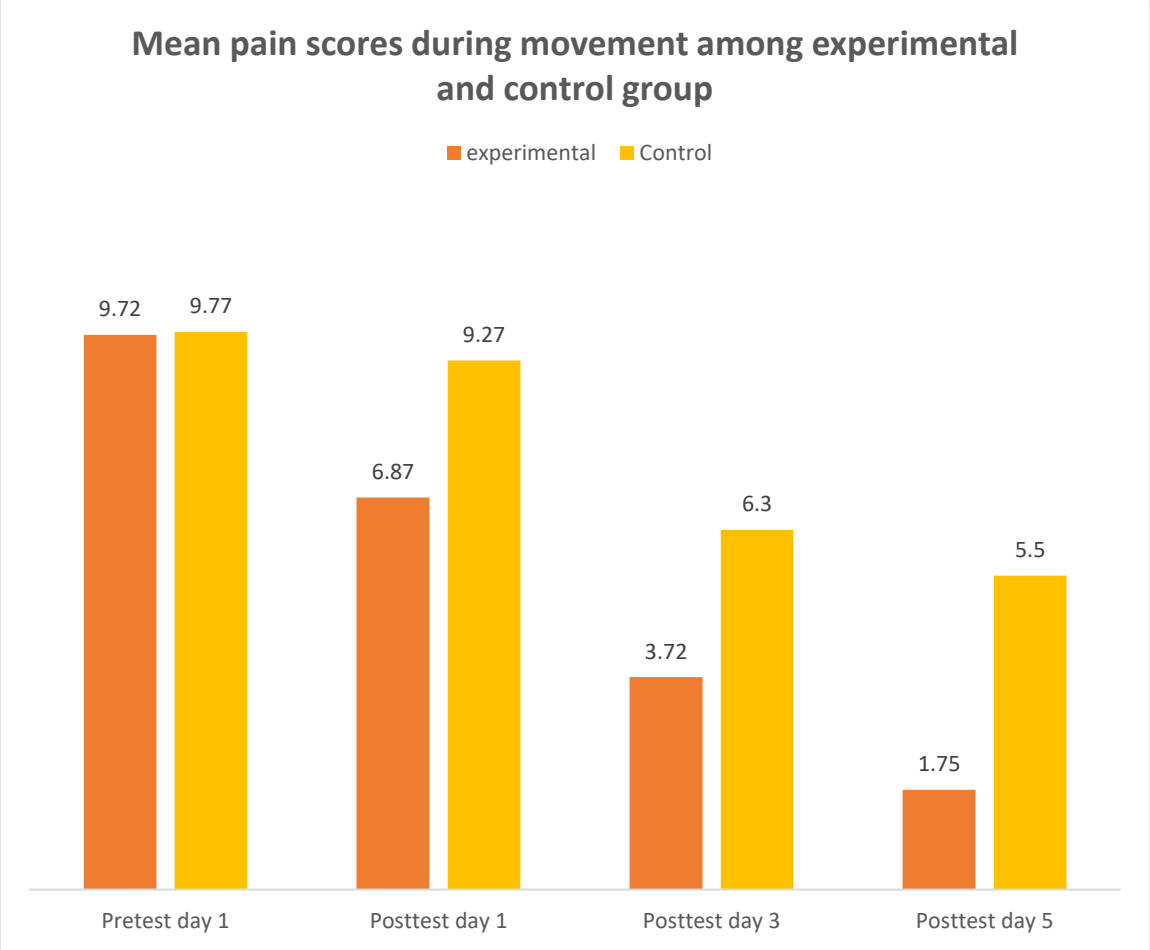


Figure 4.2 Bar diagram showing comparison of Mean pain scores during movement

In Figure 4.2, the bar diagram depicts the mean pain scores during movement for both the experimental and control groups. Initial observations on the first pre-test day reveal similar pain levels in both groups. However, upon further examination, it becomes apparent that the experimental group reported a resting pain level of 1.75, while the control group experienced a higher level of 5.5.

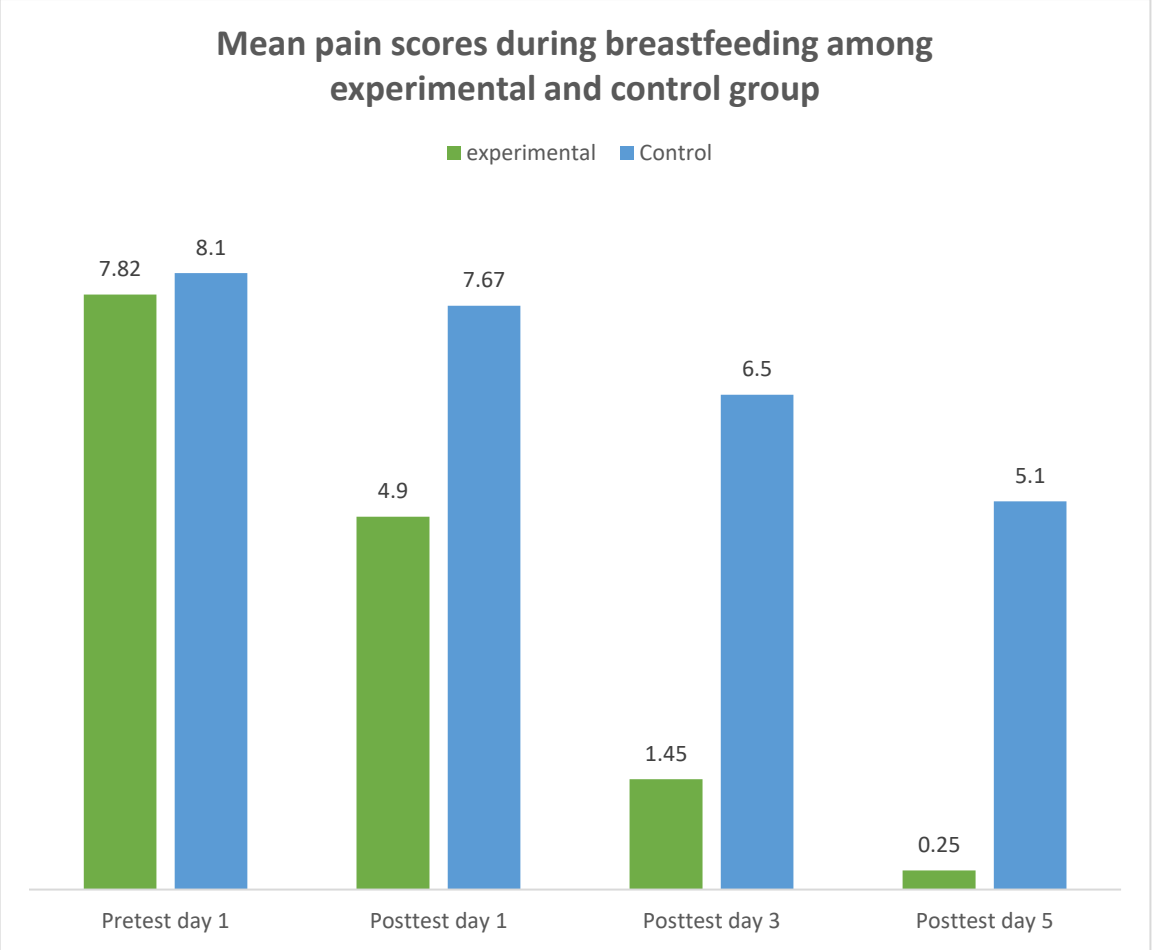


Figure 4.3 Bar diagram showing comparison of Mean pain scores during breastfeeding

Figure 4.3 illustrates the mean pain scores during the breastfeeding period for both the experimental and control groups. Initial findings on the first pre-test day suggest similar pain levels in both groups. Nevertheless, on subsequent observations at day 5 , it becomes evident that the experimental group reported a resting pain level of 0.25, while the control group experienced a higher level of 5.1.

SECTION III: ASSESSMENT OF BREASTFEEDING EFFICACY

This section encompasses the evaluation of breastfeeding efficacy in terms of the Postpartum Comfort Questionnaire (PPCQ) score and LATCH score for postnatal women who underwent Lower Segment Caesarean Section (LSCS).

Table 4.3. Domain wise postpartum comfort score among postnatal women with LSCS

N=80

Domains of postpartum comfort	Observations	Experimental group(n=40)		Control group (n=40)		Mean difference
		Reference scores (Mean ± SD)	Range	Reference scores (Mean ± SD)	Range	
Physical comfort	Pre test	26.75 ± 2.733	22.00-33.00 (27.00)	26.40 ± 2.250	22.00-30.00 (26.50)	0.35
	Post test	62.10±2.853	54.00-67.00 (62.00)	35.12 ±4.145	29.00-47.00 (35.00)	26.98
Psychospiritual comfort	Pre test	36.65 ± 2.577	31.00-42.00 (36.50)	39.42 ±2.147	35.00-43.00 (40.00)	2.77
	Post test	47.60 ± 1.751	43.00-50.00 (48.00)	34.62 ±3.446	27.00-42.00 (35.00)	12.98
Sociocultural comfort	Pre test	20.57 ± 2.194	17.00-28.00 (21.00)	22.67 ± 2.453	18.00-27.00 (22.50)	2.1
	Post test	48.40 ± 1.277	46.00-50.00 (48.00)	24.30 ± 2.355	19.00-30.00 (24.00)	24.1
Total comfort	Pre test	83.97 ± 4.480	2.21-2.74 (2.47)	88.50 ± 4.733	2.32-2.85 (2.59)	4.53
	Post test	158.10 ±3.192	4.41-4.88 (4.65)	94.05 ± 5.458	2.35-3.18 (2.76)	64.05

This table succinctly summarizes the observations pertaining to postpartum comfort domains in postnatal women who underwent Lower Segment Cesarean Section (LSCS).

The examined domains include physical comfort, psychospiritual comfort, and sociocultural comfort. Post-test outcomes reveal a noteworthy enhancement in the experimental group's comfort in all the three domains ie better physical comfort scores (62.10 ± 2.853) in comparison to the control group (35.12 ± 4.145), higher psychospiritual comfort scores (47.60 ± 1.751) compared to the control group (34.62 ± 3.446), significant increase in sociocultural comfort scores for the experimental group (48.40 ± 1.277) compared to the control group (24.30 ± 2.355.Wheras the pretest scores reveal not much noatble difference in PPCQ scores among both the groups.

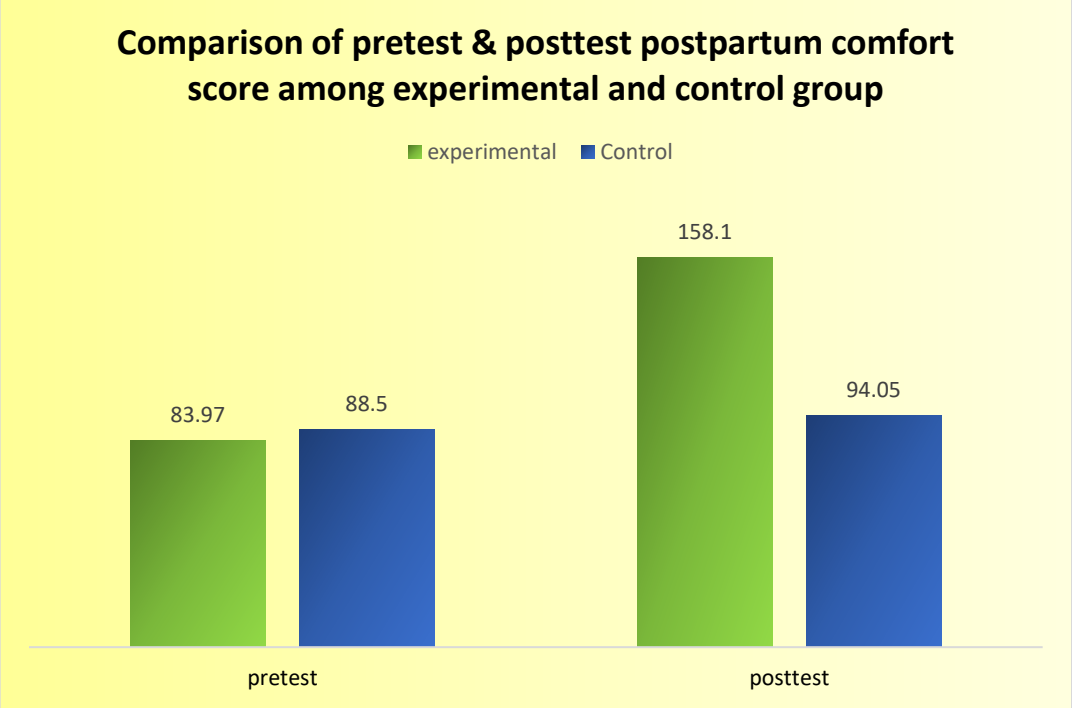
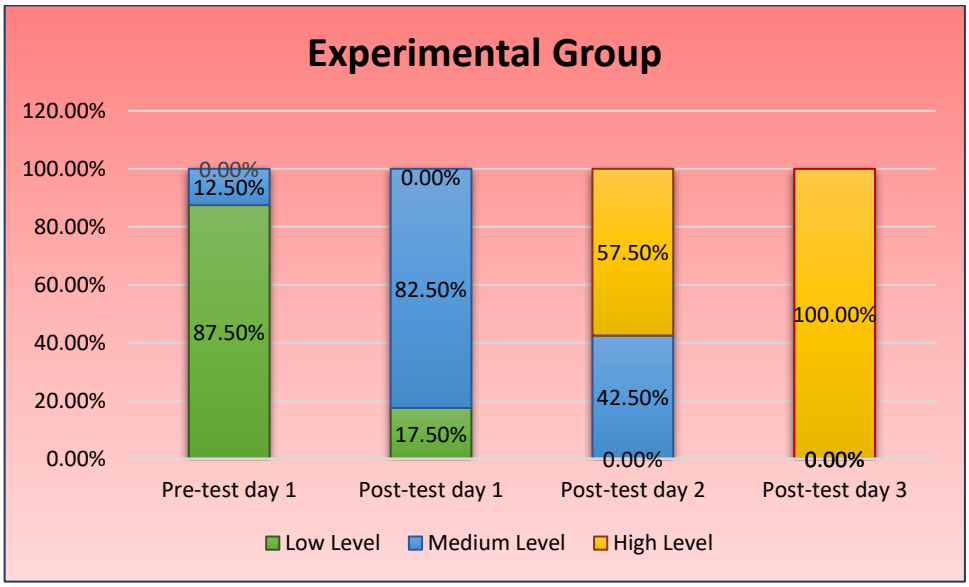


Figure 4.4. Showing comparison of Mean pretest & post-test total postpartum comfort among experimental and control group

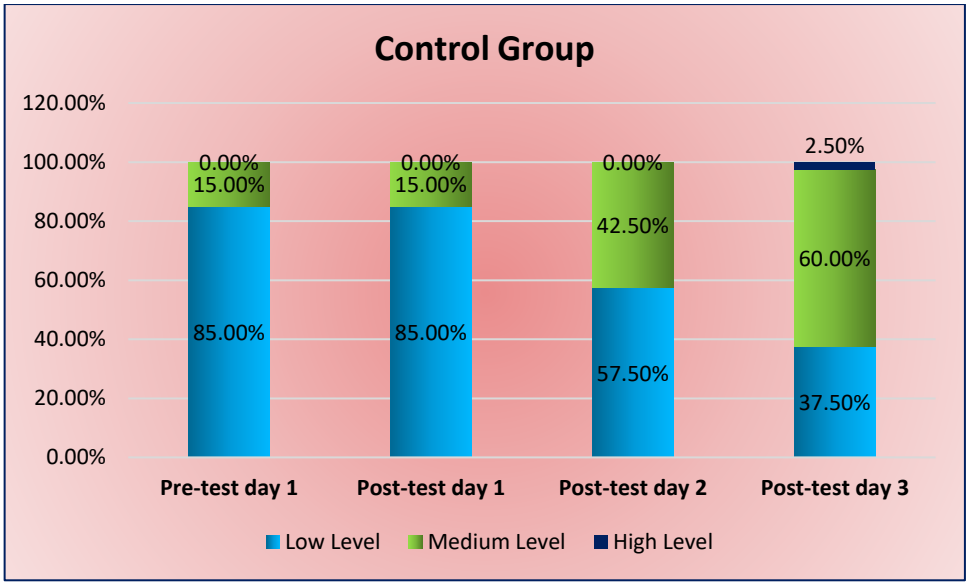
Fig; 4.4. The mean of the total comfort score at pretest and post-test for the experimental and control groups displayed in the figure above depicts that both the groups' overall comfort scores increased by Day 5, but the experimental group demonstrates a remarkable rise in total comfort scores (158.10 ± 3.192) compared to the control group (94.05 ± 5.458).

LATCH Score Assessment Among Postnatal Women with LSCS: Within this section, the evaluation of LATCH scores among postnatal women who have undergone Lower Segment Cesarean Section (LSCS) is detailed. The assessment encompasses the level of breastfeeding proficiency and individual itemized components of the LATCH score, which include Latching, Audible Swallowing, Type of Nipple, Comfort, and Hold. This comprehensive examination aims to provide insights into the various facets influencing the effectiveness of breastfeeding in the postoperative period among women with LSCS.



Fig; 4.5. Day wise breastfeeding efficacy level in Experimental group

Fig.4.5 describes the experimental group's LATCH score levels at different timepoints are displayed in the bar diagram. The majority (87.5%) of women had low LATCH scores on the first day of the pre-test, while high LATCH scores were discovered on the fifth day where all of the women 100% expressed high level of breastfeeding efficacy.



Fig; 4.6. Day wise breastfeeding efficacy level in the Control group

Fig;4.6 shows the LATCH score levels of the control group at different time intervals. The majority(85%) of women had low levels of LATCH scores on the first day of the pretest, and medium levels were reported on day five by 60% whereas 37.5% still exhibited low level of breastfeeding efficacy even on day five post delivery.

Table-4.4. Item wise LATCH score in both group among postnatal women with LSCS

Items	Experimental group (n=40)				Control group (n=40)			
	Pre test	O1	O2	O 3	Pre test	O1	O2	O 3
Latching	0.39	0.90	1.48	1.97	0.4	0.67	1.05	1.22
Audible swallowing	0.17	0.32	1.21	1.95	0.17	0.22	0.52	0.7
Type of nipple	0.95	1.19	1.53	1.95	0.72	0.97	1.07	1.30
Comfort	0	1.63	1.92	2	0.025	0.07	0.7	0.87
Hold	0	0.51	1.48	1.97	0.025	0.05	0.55	0.97
Total LATCH Score	1.47	4.56	7.65	9.85	1.35	2	3.9	5.07

Table 4.4 outlines the mean values of each LATCH score item, including Latching, Audible Swallowing, Type of Nipple, Comfort, and Hold, for both the experimental and control groups at different assessment points (Pre-test, O1, O2, O3). The table offers a comprehensive understanding of the item wise progression and overall LATCH scores in the breastfeeding efficacy assessment between the experimental and control groups. Across individual LATCH score items, such as Latching, Audible Swallowing, Type of Nipple, Comfort, and Hold, there is a noticeable increase observed at each assessment point (Pre-test, O1, O2, O3). This trend is further affirmed by the escalating total LATCH scores from 1.47 to 9.85 in the experimental group whereas from 1.35 to 5.07 in the control group.

Normality of Data

The normality of data was assessed using Kolmogorov-Smirnov test (K-S test) and Shapiro wilk test using spss before choosing appropriate statistical test.

Variable	Group	K-S test	S-W test
PPCQ	Experimental	0.075	0.181
	Control	0.200	0.905

Variable	Group	K-S test	S-W test
LATCH	Experimental	0.050	0.063
	Control	0.080	0.060

P value > 0.05 , so we accept the null hypothesis that data was normaly distributed.

TESTING OF HYPOTHESIS

To assess the significance of differences in breastfeeding efficacy (PPCQ & LATCH score) between the experimental and control groups, the following null and alternative hypotheses were formulated at a 0.05 level of significance.

H0: There is no significant difference in the breast-feeding efficacy among postnatal women with LSCS after implementation of Reflex Zone Stimulation.

H1: There is a significant difference in breast-feeding efficacy among postnatal women with LSCS after implementation of Reflex Zone Stimulation.

SECTION IV: EFFECTIVENESS OF REFLEX ZONE STIMULATION

This section delineates the effectiveness of reflex zone stimulation on breastfeeding efficacy (PPCQ & LATCH) among postnatal women with Lower Segment Cesarean Section (LSCS). The section is subdivided into two subsections, focusing on postpartum comfort and lactation among postnatal women with LSCS following the implementation of reflex zone stimulation, utilizing the Postpartum Comfort Questionnaire (PPCQ).and LATCH scores. The assessment employed unpaired "t" tests and paired t-tests to elucidate the impact of reflex zone stimulation on postpartum comfort during breastfeeding among postnatal women with LSCS. The choice of statistical tests aligns with the assumption of normal data distribution for the variables under consideration.

Table: 4.8. Comparison of PPCQ scores between experimental and control group:

N=80

Groups	**Pre test (Mean ± SD)**	**Post test (Mean ± SD)**	**Within group comparison** T statistic (df) (p value)	**Between group post-test comparison** T statistic (df) (p value)
Experimental Group (n=40)	83.97 ± 4.480	158.10 ±3.192	78.630 (39) **(0.001) ***	64.060 (78) **(0.001) ***
Control Group (n=40)	88.50 ± 4.733	94.05 ± 5.458	5.361(39) **(0.080)**	

* = p value significant at 0.05 level of significance

Since the calculated p value is less than 0.05 for within group (experimental group =p<0.001) and between the group (p< 0.001). This suggests that there is a significant difference in postpartum comfort after the implementation of reflex zone stimulation.

Furthermore, no significant difference is noted within the control group as the p value (0.080) within this grup is more than set p value i.e. 0.05.

Table 4.9 Comparison of day wise LATCH scores between experimental and control group (unpaired t test) N=80

Name of variable	Group				Mean difference	Between group
	Experimental Group (n=40)		Control Group (n=40)			
	Mean ± Sd	Min-Max (Median)	Mean ± Sd	Min-Max (Median)		Independent t test (P value)
Pretest LATCH score	1.47±1.06	.00-4.00 (1.00)	1.35±1.05	.00-3.00 (1.00)	0.12	0.52 (0.598) NS
Post test 1 LATCH score	4.50 ± 1.06	3.00-7.00 (4.00)	2.00 ± 0.90	.00-4.00 (2.00)	2.50	11.32 (0.000*)
Post test 2 LATCH score	7.60 ± 1.31	5.00-10.00 (8.00)	3.90 ±1.00	2.00-6.00 (4.00)	3.70	14.11 (0.000*)
Post test 3 LATCH score	9.85 ± 0.36	9.00-10.00 (10.00)	5.08 ±1.07	3.00-7.00 (5.00)	4.775	26.70 (0.000*)

* = p value significant at 0.05 level of significance

NS = p value non-significant at 0.05 level of significance

Since the calculated p value 0.598 is more than set p value (0.05) for between groups on pretest day 1 this suggests that there is no significant difference between both the groups. However, on the post-test (day 1st, day 3rd and day 5th) the calculated p values (0.000) is less than 0.05 which proposes that there is a significant difference in the LATCH scores among the experimental and control groups.

Table:4.10. Repeated measures ANOVA comparing LATCH score at different time points

N=80

Groups	Time points				
	Baseline/ Pre intervention	**1st post test**	**2nd post test**	**3rd post test**	**F value(df) P value**
Experimental n=40	1.48 ± 1.062	4.50 ± 1.062	7.60 ± 1.317	9.85 ± 0.362	360 (3)* **< 0.001**
Control n=40	1.35 ± 1.051	2.00 ± 0.906	3.90 ± 1.008	5.08 ± 1.017	

* = p value significant at 0.05 level of significance

Repeated measures ANOVA was computed for comparing LATCH scores at different time points which revealed that tabulated F value was 360 at 3 degree of freedom.. The calculated p value (<0.001) is less than set value of 0.05, this signifies that there is a significant difference among both the groups in terms of total LATCH Scores.

From the tables 4.8,4.9 and 4.10 it is clearly evident that breastfeeding efficacy(i.e. both post test PPCQ and LATCH scores) improved after the implementation of reflex zone stimulation; as significant differences were noted in between groups and also within groups and no difference was noted in pretest scores among both the groups. Therefore the null hypothesis H0 is rejected and alternate hypothesisH1 is accepted at 0.05 level of significance, Hence it is concluded that reflex zone stimulation was effective in improving the breastfeeding efficacy among postnatal women with LSCS.

SECTION V: CORRELATION ANALYSIS OF PAIN WITH COMFORT AND LATCH SCORES IN EXPERIMENTAL GROUP

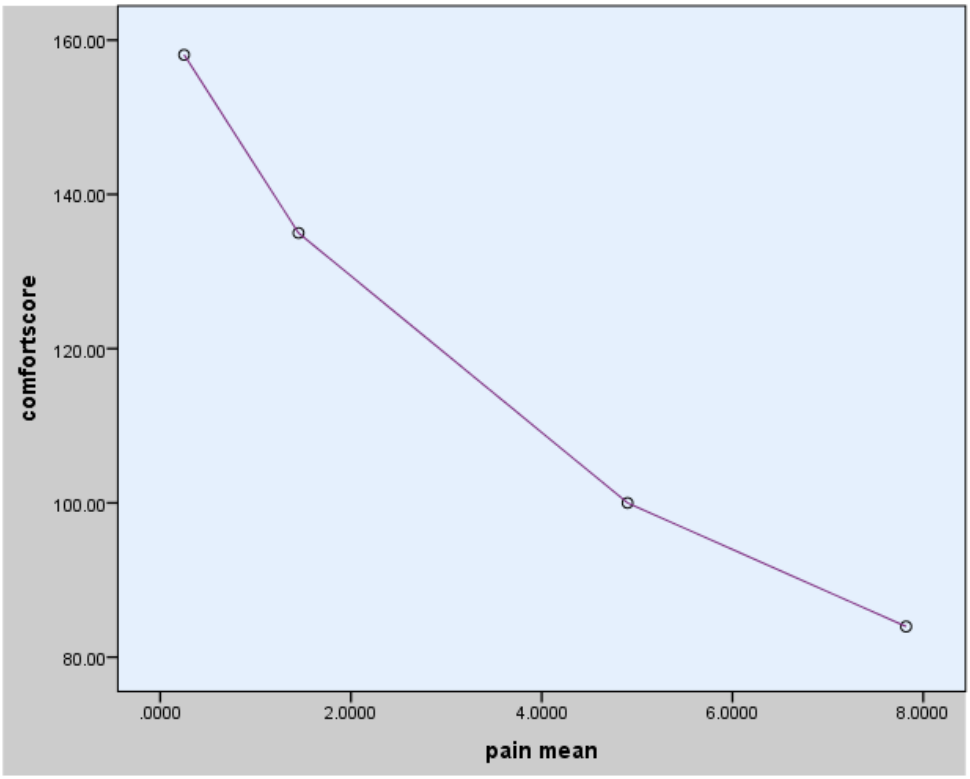
Correlation between pain and postpartum comfort: This section presents findings related to the assessment of the correlation between postpartum comfort and pain scores during breastfeeding among postnatal women with Lower Segment Cesarean Section (LSCS).

Table.4.11. Relationship between pain during breastfeeding and postpartum cc N=80

Variables	Pain score	Comfort score	P value
Pain score		**r= -.979**	**.021 (<0.05)***
Comfort score	**r= -.979**		

*= Correlation is significant at the 0.05 level

The variables assessed in this correlation analysis include "Pain Score" and "Comfort Score" among postnatal women with Lower Segment Cesarean Section (LSCS).The Pearson correlation coefficient (r) was calculated to measure the relationship between these variables. The findings reveal a strong negative correlation between "Pain Score" and "Comfort Score" (r = -0.979). The associated p-value is less than 0.05, indicating that this correlation is statistically significant. In summary, the analysis indicates a robust negative correlation, signifying that as the "Pain Score" increases, the "Comfort Score" decreases among postnatal women with LSCS during breastfeeding.



Fig;4.9. line diagram showing negative correlations between pain and comfort

Correlation between Pain and LATCH score: This section presents findings related to the assessment of the correlation between pain and LATCH score among postnatal women who have undergone Lower Segment Cesarean Section (LSCS). The analysis aims to uncover the extent and nature of the relationship between the level of pain experienced by postnatal women during breastfeeding and their corresponding LATCH scores. The Pearson correlation coefficient provides a quantitative measure of this relationship, offering valuable insights into the interplay between pain and breastfeeding efficacy in the postoperative period following LSCS.

Table: 4.12. Relationship between pain during breastfeeding and LATCH score

Variables	Pain score	LATCH score	P value
Pain score		r= -.994	.006
LATCH score	r= -.994		(<0.05)*

*= Correlation is significant at the 0.05 level

Table 4.12: Relationship between Pain during Breastfeeding and LATCH Score

In this table, two key variables investigated are "Pain Score" and "LATCH Score" among postnatal women who have undergone Lower Segment Cesarean Section (LSCS).The findings reveal an exceptionally strong negative correlation between "Pain Score" and "LATCH Score" (r = -0.994). The associated p-value is less than 0.05, indicating that this correlation is statistically significant.In summary, the analysis demonstrates a highly significant negative correlation, suggesting that as the "Pain Score" increases, the "LATCH Score" decreases among postnatal women with LSCS during breastfeeding.

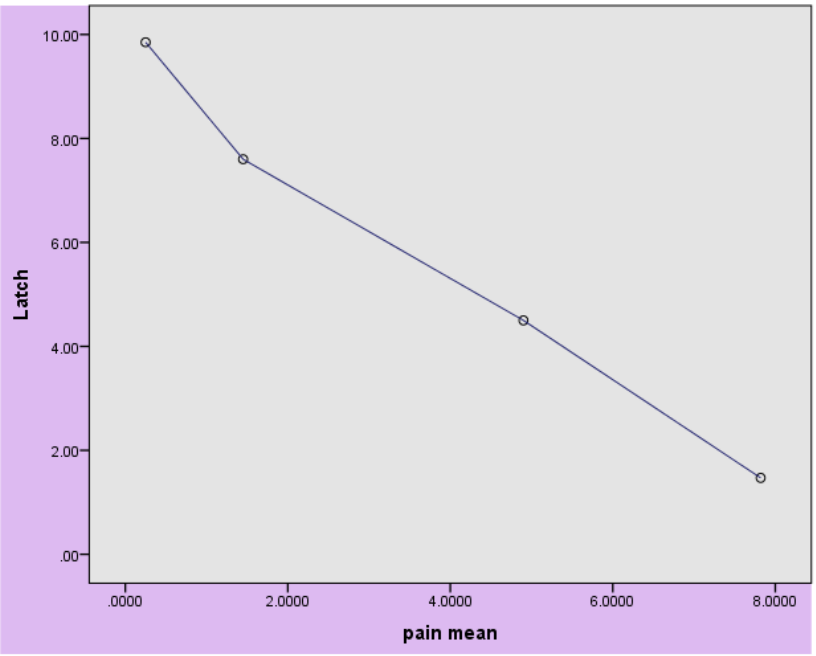


Fig.4.10. Relationship between pain during breastfeeding and LATCH score

SECTION VI: ASSOCIATION OF BREASTFEEDING EFFICACY WITH SOCIODEMOGRAPHIC AND CLINICAL VARIABLES IN EXPERIMENTAL GROUP

This section elucidates the findings related to assessing the association of Breast-Feeding Efficacy, evaluated through PPCQ (Postpartum Comfort Questionnaire) and LATCH scores, with sociodemographic and clinical variables among postnatal women who have undergone Lower Segment Cesarean Section (LSCS). The Chi-square test was employed as the statistical tool to evaluate these associations

Association of LATCH with sociodemographic and clinical variables

In the context of the duration of marriage, a Chi-square value of 7.853 with 3 degrees of freedom resulted in a p-value of 0.049. Similarly, concerning the number of living children, a Chi-square value of 6.169 with 2 degrees of freedom yielded a p-value of

0.046. In respect of order of current pregnancy Chi-square value 5.77 with 2 degree of freedom and significant p value 0.05. These results indicate a statistically significant association between the number of living children and Breast-Feeding Efficacy, highlighting a meaningful link between these variables. No other significant association were noted with the other sociodemographic variables. (refer table 4.14)

Association of PPCQ with sociodemographic and clinical variables

Regarding the duration of marriage, the calculated Chi-square value was 47.98 with 33 degrees of freedom, resulting in a p-value of 0.04. Additionally, for the number of living children, a Chi-square value of 20.76 with 11 degrees of freedom led to a p-value of 0.037. These outcomes signify a significant association between the type of pregnancy, type of diet, and postpartum comfort scores, underscoring a meaningful relationship between these variables. (refer table 4.14)

Table 4.14 Chi square association of socio demographic and clinical variables with LATCH and PPCQ among Postnatal women with LSCS in experimental group (n=40)

Sl No	Name of variables	LATCH Score			PPCQ score		
		Calculated chi square	df	P value	Calculated chi square	Df	P value
1	Age (in years)	6.16	3	0.10^{NS}	29.08	33	0.66^{NS}
2	Religion	Constant					
3	Educational Status	3.413	3	0.33^{NS}	37.38	33	0.27^{NS}

4	Employment Status	0.190	2	0.90^{NS}	15.68	22	0.83^{NS}
5	Residence	0.16	1	0.68^{NS}	14.80	11	0.19^{NS}
6	Duration of marriage	7.853	3	0.049^{SIG}	47.98	33	0.04^{SIG}
7	Type of diet	0.59	1	0.44^{NS}	9.48	11	0.57^{NS}
8	Type of family	1.04	1	0.30^{NS}	7.61	11	0.74^{NS}
9	Socioeconomic status	0.60	3	0.89^{NS}	27.40	33	0.74^{NS}
10	No of antenatal visits during pregnancy	2.31	3	0.51^{NS}	40.06	33	0.18^{NS}
11	Type of pregnancy	1.30	1	0.25^{NS}	10.88	11	0.45^{NS}
12	Order of current pregnancy	5.77	2	0.05^{SIG}	24.51	22	0.32^{NS}
13	Gestational age (in weeks) at the time of delivery	1.86	1	0.17^{NS}	11.17	11	0.42^{NS}
14	Number of living children's	6.169	2	0.04^{SIG}	20.76	11	0.03^{SIG}

15	Indication for LSCS in current pregnancy	4.23	1	0.90^{NS}	7.85	11	0.72^{NS}
16	Initiation of breast feeding	3.11	1	0.07^{NS}	17.87	11	0.08^{NS}
17	Gender of the baby	0.13	1	0.71^{NS}	11.04	11	0.44^{NS}
	Birth weight of baby	1.34	2	0.51^{NS}	28.59	22	0.15^{NS}
18	History of Abortion	0.11	1	0.73^{NS}	7.92	11	0.72^{NS}
19	History of Infertility	0.37	1	0.54^{NS}	4.03	11	0.96^{NS}
20	Nature of pain	1.26	3	0.73^{NS}	24.27	33	0.86^{NS}
21	Most affecting site	Constant					

SIG = p value significant at 0.05 level of significance

Table shows the association between sociodemographic & clinical variable with LATCH score & PPCQ score among experimental group after giving Reflex Zone Stimulation.

CHAPTER-V

DISCUSSION

CHAPTER-V

DISCUSSION

The present study aimed to assess the effectiveness of Reflex zone stimulation on breastfeeding efficacy among postnatal women with Lower Segment Cesarean Section (LSCS) in AIIMS Bhopal. In this chapter, the major findings of the study, are presented and reviewed in relation with findings from other relevant studies.It also explores the implications, limitations, and future recommendations.

Major findings of the study:

The significant findings of the study as per the research objectives are discussed and delineated under the following sections-

5.1.Sample characteristics of postnatal women with LSCS.

5.2. Pain assessment among experimental & control group.

5.3. Effectiveness of reflex zone stimulation on Postpartum comfort score

5.4. Effectiveness of reflex zone stimulation on LATCH score

5.5. Correlation of pain, comfort with breastfeeding efficacy in experimental group

5.6. Association of breastfeeding efficacy with sociodemographic and clinical variables in experimental group.

5.1. Sample characteristics of postnatal women with LSCS: The analysis of sample characteristics revealed pertinent insights into the demographic and clinical profile of postnatal women who had undergone Lower Segment Cesarean Section (LSCS). Understanding these characteristics provides a contextual foundation for interpreting the subsequent findings. The present study revealed the following **key findings regarding sample characteristics:**

In terms of age, the experimental group had a mean age of 27.32 years, while the control group exhibited a mean age of 28.65 years. Regarding education, 35% of women in the experimental group and 37.5% in the control group had completed higher secondary education. The majority of women in both groups (82.5%) identified as unemployed/homemakers[3]. A significant portion of the participants fell into the lower-middle category, with 65% in the experimental group and 45% in the control group. Most women (55% in the experimental group and 45% in the control group) experienced first time pregnancy. Both groups had pregnancies with a mean gestational age of 38.78 weeks at delivery (66,67). Regarding pain, all women in both groups reported the incision site (100%) as the mostcommon site of pain, characterized as horrible in nature by 65% in the experimental group and 75% in the control group[25,53.]

Comparable findings were observed in a quasi-experimental study conducted in 2022, where most women were primigravida (60%) with higher secondary education (50%).1 A descriptive research study in Maharashtra, India, revealed gestational weeks between 36-40[52.] Similarily in a quasi-experimental design study conducted in 2023, the mean age of primiparous women in the experimental and control groups was 23.33 and 24.65 years, respectively. More than half (56% and 52%) of the experimental and control groups had a higher secondary education level, and 66% of primiparous mothers in the experimental group were housewives, compared to 62% in the control group[25]. A pre-experimental study conducted in 2015 showed that lactation failure mothers were in the age group of 28-30. Housewives constituted 65%, and 60% were vegetarians[54]. A non-randomized clinical trial found that 90% and 55% of the control and experimental groups, respectively, were housewives, aligning with the present study. Findings resembled a

descriptive study in Turkey, where mothers in the 20-34 age group (mean 27.07) had 62%, 84.4% planned pregnancies[55].

Conversely, a contradictory RCT in Turkey in 2018 found that 56% had primary school and lower education[56]. Another non-randomized controlled clinical trial in 2019 revealed similar mean ages but differing educational levels, with 37.5% and 50% of the control and experimental groups having primary and preparatory education, respectively[57].

The majority of pregnant women in the present study were in the age group of 22-30 years, with primary and secondary education levels, predominantly housewives or unemployed and most were primipara with planned pregnancies, The consistency in findings across many quasi-experimental and descriptive studies indicates a degree of uniformity in the demographic characteristics of postnatal women, reinforcing the generalizability of certain patterns. Variances, especially in educational levels, highlight the importance of considering regional or cultural contexts that may impact the education of postnatal women.

5.2 Pain assessment among experimental & control group:

In the present study, an analysis of pain scores within the experimental and control groups unveiled distinct patterns in pretest and post-test stages, highlighting the impact of reflex zone stimulation on pain management which could be considered as a secondary outcome.

During the resting stage, the pretest mean pain score in the experimental group was 9.07 (S.D. = 0.65), slightly higher than the control group's mean of 9.00 (S.D. = 0.56). Post-test day 5 revealed a notable divergence, with the experimental group showcasing a mean pain score of 0.67 (S.D. = 0.82), significantly lower than the control group's mean of 5.40

(S.D. = 0.59). The mean difference of 4.72 underscores a substantial reduction in pain scores favoring the experimental group.

Movement-Related Pain Scores :on day 1 pre-test, participants in the Experimental Group had a mean pain score of 9.72 (S.D. = 0.50), slightly higher than the Control Group's mean of 9.77 (S.D. = 0.42). By post-test day 5, the Experimental Group demonstrated a substantial decrease in pain, recording a mean score of 1.75 (S.D. = 0.70), resulting in a mean difference of 3.75. In contrast, the Control Group's mean post-test day 5 pain score was 5.50 (S.D. = 0.84).

Breastfeeding-Related Pain Scores:During the pretest phase, the Experimental Group reported a mean pain score of 7.82 (S.D. = 0.71) during breastfeeding, while the Control Group had a mean of 8.10 (S.D. = 0.70). Post-test day 5 saw a further reduction in pain for the Experimental Group, with a mean score of 0.25 (S.D. = 0.43). In comparison, the Control Group had a higher mean post-test day 5 pain score of 5.10 (S.D. = 0.77).

Consistent findings were observed in a quasi-experimental study in 2022, emphasizing the effectiveness of foot and hand massage in reducing post-cesarean pain. This aligns with other studies that demonstrated a statistically significant reduction in pain intensity after reflexology interventions by modulating central nervous system neurotransmitters. The present study's outcomes resonate with earlier research, including blind clinical trials and quasi-experimental designs, affirming that reflex zone stimulation, similar to massage and reflexology, significantly reduces post-cesarean pain levels. For instance an Iranian study among 80 pregnant women reported that twenty minutes of foot massage significantly reduced post-cesarean pain within the first 24 hours[54,55]. Another study on Turkish women apparently revealed a statistically significant decline in post cesarean

pain intensity score before and after reflexology in the experimental group unlike the control group[44]. An Indian study also depicted reduction in pain scores 60 min after foot reflexology The findings echo the positive impact of such interventions on pain reduction in diverse populations, validating the efficacy of reflex zone stimulation in alleviating post-cesarean pain[54].

In conclusion, the results of the current study, when compared with a range of studies, consistently point towards a substantial reduction in post-caesarean pain levels following reflex zone stimulation.. Notably, diverse populations, across the world , demonstrated a positive impact on pain reduction following interventions such as foot massage and reflexology. These collective outcomes underscore the potential of reflex zone stimulation as an effective and versatile intervention for alleviating post-cesarean pain, providing valuable insights for improving pain management strategies in postnatal care.

5.3. Effectiveness of reflex zone stimulation on Postpartum comfort score among postnatal women with LSCS

The study assessed the efficacy of reflex zone stimulation in enhancing postpartum comfort scores among postnatal women. The results delineate the positive effects of the intervention on the overall comfort levels experienced by participants during the postpartum period.

Upon comparing pretest and post-test postpartum comfort scores, a noteworthy improvement was observed in the experimental group that underwent reflex zone stimulation. In the pretest phase, the total comfort score for the experimental group was 83.97 (S.D. = 4.48), experiencing a remarkable surge in post-test total comfort (Mean = 158.10, S.D. = 3.19). Examining specific domains of comfort, the pretest mean for physical comfort in the experimental group was 26.75 (S.D. = 2.733), slightly higher than

the control group's mean of 26.40 (S.D. = 2.250). Posttest scores revealed a substantial increase in physical comfort for the experimental group (Mean = 62.10, S.D. = 2.853), while the control group exhibited a less pronounced increase (Mean = 35.12, S.D. = 4.14).In terms of psychological comfort, the pretest mean for the experimental group was 36.65 (S.D. = 2.57), whereas the control group exhibited a mean of 39.42 (S.D. = 2.14). Post-test results displayed a significant enhancement in psychological comfort for the experimental group (Mean = 47.60, S.D. = 1.75).Analyzing sociocultural comfort, the pretest mean for the experimental group was 20.57 (S.D. = 2.19), compared to the control group mean of 22.67 (S.D. = 2.45). Post-test scores revealed a noteworthy rise in sociocultural comfort for the experimental group (Mean = 48.40, S.D. = 1.27) compared to the control group (Mean = 24.30, SD = 2.35).

These findings are consistent with a randomized controlled trial in Turkey, where the intervention group demonstrated higher postpartum comfort scores (156.6, SD=5.5) compared to controls (131.2, SD=8.4). Similarly, a quasi-experimental study in Egypt reported statistically significant differences in overall comfort scores (156.6 in the experimental group vs. 102.1 in the control group). Another descriptive study in 2021 affirmed the impact of overall Postpartum Comfort Questionnaire (PPCQ) scores on successful breastfeeding, with a mean score of 122.0.[52,25,58].

Collectively, these results suggest that reflex zone stimulation contributes to a substantial improvement in postpartum comfort scores, encompassing physical, psychological, and sociocultural domains. The high comfort scores in the experimental group, when compared to control groups in various studies, highlight the potential role of enhanced postpartum comfort in positively influencing breastfeeding efficacy.

5.4.Effectiveness of reflex zone stimulation on LATCH score among postnatal women with LSCS

In this study, a significant impact of reflex zone stimulation on LATCH scores, reflecting breastfeeding efficacy, was observed. On the first day of the pre-test, 87.5% of women in the experimental group exhibited low LATCH scores; however, by the fifth day, 100% of them demonstrated high levels of breastfeeding efficacy. In contrast, the control group had 85% of women reporting low LATCH scores on the first day, with 60% showing medium levels on day five. Notably, 37.5% of women in the control group reported low breastfeeding efficacy on day five after delivery.The mean LATCH scores on the fifth day were markedly higher in the experimental group (9.85) compared to the control group (5.08) after the intervention. Prior to the intervention, the mean LATCH scores on the first day were 1.475 in the experimental group and 1.35 in the control group.

Consistent findings were noted in a quasi-experimental design with 100 primipara mothers, where post-test LATCH scores in the experimental group were 7.1 (1.5) compared to 8.1 (1.2) in the control group. Another study in Maharashtra in 2021 reported a mean LATCH score increase from 3.53 to 9.08 in postnatal caesarean mothers after Reflex Zone Stimulation, emphasizing the effectiveness of this intervention in promoting breastfeeding. A Pre-experimental study in 2021 found an overall mean difference value of 9.59 in the experimental group. Similarly, a research design in 2018 demonstrated a significant increase in breast milk volume in the reflexology group compared to the control group. A literature review in Gujarat in 2019 highlighted that foot reflexology improved lactation[59], a sentiment echoed in a Puducherry study in 2015, where reflex zone stimulation significantly increased lactation initiation and maintenance[52]. In a quasi-experimental study with 40 postnatal women, mean pretest LATCH score was 4.8 (1.47), and post-test score was 11.9 (0.91)[21,22,23]. further corroborating the positive impact of reflex zone stimulation on breastfeeding efficacy.

Cumulatively, findings from various studies consistently affirm the efficacy of reflex zone stimulation in enhancing the initiation and maintenance of lactation. This study contributes to the growing body of evidence supporting the positive influence of reflex zone stimulation on LATCH scores, providing valuable insights into its potential role in improving breastfeeding outcomes among postnatal women with LSCS.

5.5.Correlation of pain, comfort with breastfeeding efficacy in experimental group

In this study, the correlation between pain and both comfort and LATCH score in the experimental group was assessed using the Pearson correlation coefficient. The results revealed highly negative correlations, with a coefficient of -0.979 between pain score and comfort score, and -0.994 between pain score and LATCH score. These findings indicate that as the comfort score increases, the pain experienced by women decreases, and a decrease in pain correlates with an increase in the LATCH score, reflecting higher breastfeeding efficacy.A parallel study conducted in Turkey in 2021 reported a mean Lactation Rating System score of 8.33 ± 1.67 and a Postpartum Comfort Questionnaire score of 122.06 ± 0.31. Their observations highlighted a high rate of successful breastfeeding among mothers with a medium comfort level, emphasizing the impact of maternal comfort levels on successful breastfeeding outcomes.In a prospective study in 2019, it was discovered that for obese women, there was a statistically significant positive correlation between the LATCH score and the total Postpartum Comfort Questionnaire (PPCQ) score, as well as the physical, psycho-spiritual, and sociocultural comfort subscale scores. Conversely, non-obese mothers showed a positive correlation only between the LATCH score and the physical comfort subscale score.

The collective evidence from various studies consistently supports the existence of a correlation between pain, comfort, and LATCH scores. These findings underscore the

intricate relationship between maternal well-being, pain perception, and breastfeeding efficacy. The negative correlations observed in this study align with existing literature, reinforcing the idea that interventions promoting comfort may positively influence both pain management and breastfeeding outcomes among postnatal women with LSCS.

5.6.Association of breastfeeding efficacy with sociodemographic and clinical variables in experimental group:

In this study, a Chi-Square test revealed a statistically significant association between breastfeeding efficacy and certain sociodemographic and clinical variables among postnatal women with LSCS in the experimental group ($p<0.05$). Notably, the number of previous living children and the duration of marriage were identified as variables with a significant impact on breastfeeding efficacy.

Contrastingly, a study conducted in Gurugram in 2021 reported no significant association between the level of lactation failure and selected demographic variables during both pretest and posttest phases. The demographic variables, including mother's age, educational status, days of the postnatal period, type of delivery, history of infertility, duration of marriage, nature of marriage, and family history of lactation insufficiency, did not exhibit any association with lactation insufficiency [60,70].

These findings highlight the interplay between sociodemographic and clinical factors and breastfeeding efficacy, emphasizing the need for a comprehensive understanding of individual variables that influence postnatal outcomes. The statistically significant associations uncovered in the present study contribute valuable insights into the complex dynamics influencing breastfeeding efficacy among postnatal women with LSCS.

Limitations of the study: Despite the positive results, the study has its limitations. These may include a relatively small sample size, potential biases, and variations in individual responses to the intervention. Acknowledging these limitations is essential for interpreting the results accurately. The study is confined to a single setting, specifically AIIMS Bhopal, which may limit the generalizability of the findings to a broader population. High-risk pregnancies and critically ill pregnant women were not included in the study due to emerging complications and ethical concerns. Therefore, the results may not be representative of these specific populations.• The study exclusively focused on post-caesarean mothers, potentially limiting the applicability of the findings to women with different modes of delivery.

Implications of the Study The findings of this study hold several noteworthy implications for both clinical practice and future research.

Clinical Practice The positive outcomes observed in breastfeeding efficacy, postpartum comfort, and pain reduction through reflex zone stimulation suggest that integrating this intervention into postnatal care protocols could enhance the overall well-being of post-caesarean mothers. Healthcare practitioners, particularly nurse midwives, could consider incorporating reflex zone stimulation techniques into their skill set for better patient care.Nurses are encouraged to actively incorporate these modalities, providing additional tools to address patient needs effectively. Regular implementation of these therapies in patient care can bridge the gap for complementary interventions in a hospital setting, aligning with the growing interest in holistic healthcare.

Nursing administration

Nursing administrators can play a crucial role by developing written policies that integrate reflex zone stimulation into existing care protocols for caesarean mothers. It is

essential for all nurses to be well-versed in the implications of non-pharmacological methods, and administrators should ensure that nurses using these therapies are adequately trained and recognized as competent by regulatory bodies. This strategic integration can enhance patient care and contribute to a comprehensive approach to maternal health.

Nursing Education

Educators have the opportunity to shape the future of nursing by providing training on reflex zone stimulation to students and multidisciplinary professionals. Conducting workshops, seminars, and conferences can further disseminate information about complementary therapies. Reflex zone stimulation, as an effective non-pharmacological intervention in promoting breastfeeding among post-natal mothers, should be integrated into nursing curricula. This approach fosters a positive attitude toward these therapies, aligning with the global trend in nursing and midwifery towards holistic patient care.

Nursing research While reflex zone stimulation in obstetrics is a well-researched area, there is still room for exploration, particularly in early initiation of breast milk secretion and maintaining a good latch during breastfeeding. Nurse researchers can leverage the findings of the present study to contribute new knowledge. Further clinical trials can be conducted to delve deeper into the effects of reflex zone stimulation, providing more concrete evidence and advancing the field of maternal healthcare.

These implications underscore the potential of reflex zone stimulation as a holistic intervention in postnatal care, advocating for its integration into clinical practices and stimulating further research to uncover its multifaceted benefits across various maternal health domains**.**

CONCLUSION

In conclusion, the present study provides valuable insights into the effectiveness of Reflex zone stimulation on breastfeeding efficacy among postnatal women with LSCS. The positive outcomes and high patient satisfaction underscore the potential of this intervention to improve nursing care practices and contribute to better maternal and infant health. However, further research is needed to strengthen the evidence base and facilitate the integration of Reflex zone stimulation into routine postnatal care.

FUTURE RECOMMENDATIONS:

To enhance the generalizability and depth of the findings, future research in this area could focus on:Conducting larger-scale studies with diverse populations to validate the effectiveness of Reflex zone stimulation. Replicating the study on a larger scale would strengthen the generalizability of the results. Expanding the participant pool could enhance the external validity of the findings, allowing for more robust conclusions and broader applicability in diverse healthcare settings

Exploring the long-term effects of Reflex zone stimulation on breastfeeding outcomes.Investigating the feasibility of integrating Reflex zone stimulation into routine postnatal care practices in different healthcare settings.For instance A comparable study could explore the impact of reflex zone stimulation on sleep, pain reduction, and bowel and bladder patterns in diverse obstetrical and gynecological surgical scenarios.

SUMMARY

This chapter presented the major findings of the study, emphasizing the effectiveness of reflex zone stimulation on breastfeeding efficacy among postnatal women with Lower Segment Cesarean Section (LSCS) at AIIMS Bhopal. The study delves into various aspects, including sample characteristics, pain assessment, postpartum comfort scores, LATCH scores, and the correlation between pain, comfort, and breastfeeding efficacy.

The findings reveal a significant improvement in breastfeeding efficacy, postpartum comfort, and pain reduction among women who underwent reflex zone stimulation. These outcomes hold implications for nursing practice, administration, education, and research, urging the integration of complementary therapies like reflex zone stimulation into routine care protocols, policy development, educational curricula, and ongoing research initiatives.The limitations of the study, such as its single-setting focus and exclusion of high-risk pregnancies, highlight areas for future exploration. Despite these limitations, the study provides valuable insights into the potential benefits of reflex zone stimulation, paving the way for further research and clinical application in enhancing maternal well-being post-cesarean section.

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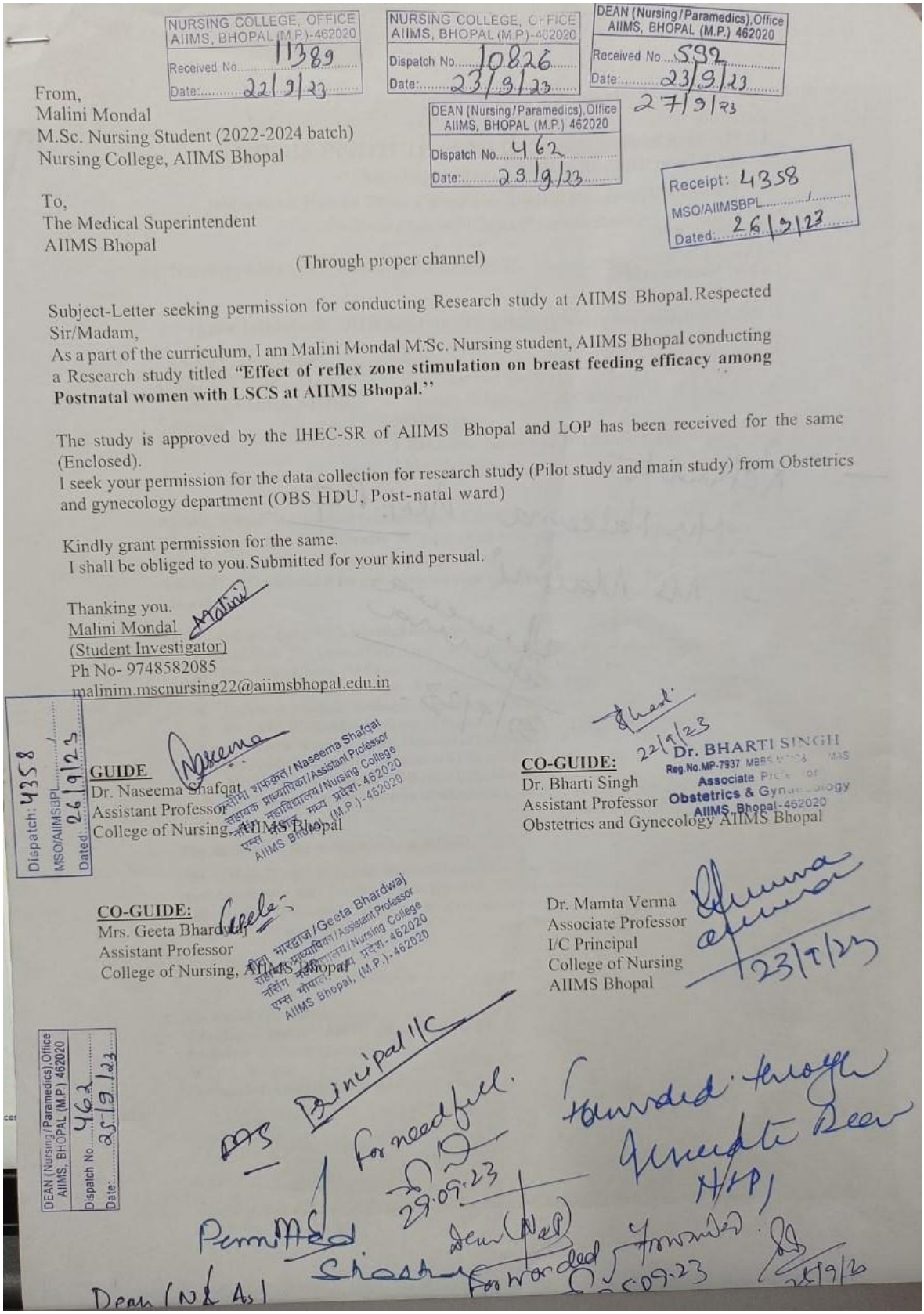
ANNEXURES

ANNEXURE 1

LETTER SEEKING PERMISSION FOR CONDUCTING STUDY



NURSING COLLEGE, OFFICE AIIMS, BHOPAL (M.P)-462020 Received No. 11389 Date: 22/9/23

NURSING COLLEGE, OFFICE AIIMS, BHOPAL (M.P)-462020 Dispatch No. 10826 Date: 23/9/23

DEAN (Nursing/Paramedics), Office AIIMS, BHOPAL (M.P.) 462020 Received No. 592 Date: 23/9/23

27/9/23

DEAN (Nursing/Paramedics), Office AIIMS, BHOPAL (M.P.) 462020 Dispatch No. 462 Date: 23/9/23

Receipt: 4358 MSO/AIIMSBPL Dated: 26/9/23

From,
Malini Mondal
M.Sc. Nursing Student (2022-2024 batch)
Nursing College, AIIMS Bhopal

To,
The Medical Superintendent
AIIMS Bhopal

(Through proper channel)

Subject-Letter seeking permission for conducting Research study at AIIMS Bhopal. Respected Sir/Madam,

As a part of the curriculum, I am Malini Mondal M.Sc. Nursing student, AIIMS Bhopal conducting a Research study titled **"Effect of reflex zone stimulation on breast feeding efficacy among Postnatal women with LSCS at AIIMS Bhopal."**

The study is approved by the IHEC-SR of AIIMS Bhopal and LOP has been received for the same (Enclosed).

I seek your permission for the data collection for research study (Pilot study and main study) from Obstetrics and gynecology department (OBS HDU, Post-natal ward)

Kindly grant permission for the same.

I shall be obliged to you. Submitted for your kind persual.

Thanking you.

Malini Mondal
(Student Investigator)
Ph No- 9748582085
malinim.mscnursing22@aiimsbhopal.edu.in

Dispatch: 4358 MSO/AIIMSBPL Dated: 26/9/23

GUIDE
Dr. Naseema Shafqat
Assistant Professor
College of Nursing, AIIMS Bhopal

डॉ. नसीमा शफकत / Naseema Shafqat
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गीता भारद्वाज / Geeta Bhardwaj
सहायक प्राध्यापिका / Assistant Professor
नर्सिंग महाविद्यालय / Nursing College
एम्स भोपाल मध्य प्रदेश - 462020
AIIMS Bhopal, (M.P.)-462020

Dr. Mamta Verma
Associate Professor
I/C Principal
College of Nursing
AIIMS Bhopal

23/9/23

DEAN (Nursing/Paramedics), Office AIIMS, BHOPAL (M.P.) 462020 Dispatch No. 462 Date: 25/9/23

DOS

Principal I/C

for needful.
29.09.23

Permitted
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Forwarded through Nodal HOD

Forwarded
29.09.23

Dean (N & As)

25/9/23

ANNEXURE 2

DATA COLLECTION TOOL(English)

INSTRUCTIONS: Please put a tick mark (√) against the appropriate response and fill the blank wherever applicable.

PART I
A. SOCIO DEMOGRAPHIC DATA

01. Age (in years) _____

02. Religion _____

03. Educational Status

A. No Formal Education

B. Primary level

C. Secondary level

D. Higher Secondary

E. Graduation and above

04. Employment Status

A. Unemployed / Homemaker

B. Self-Employed

C. Government Employee

D. Private Employee

E. If other specify_____

05. Residence

A. Rural

B. Urban

C. Semi Urban

06. Duration of marriage

A. < 1 Year

B. 1 – 3 Year

C. 3 – 5 Year

D. >5 Year

07. Type of diet

A. Vegetarian

B. Non-Vegetarian

C. If other specify _____

08. Type of family

A. Nuclear

B. Joint

C. Extended

09. Socio – economic status

a. Education of the head

Sl. No		Score	Answer
1.	Profession or Honours	7	
2.	Graduate	6	
3.	Intermediate or diploma	5	
4.	High school certificate	4	
5.	Middle school certificate	3	
6.	Primary school certificate	2	
7.	Illiterate	1	

b. Occupation of Head of the family

Sl. No	Occupation Of the Head	Scores	Answer
1.	Legislators, Senior Officials and Managers	10	
2.	Professionals	9	
3.	Technicians and Associate Professional	8	
4.	Clerks	7	
5.	Skilled workers and Shop and Market Sales Workers	6	
6.	Skilled Agricultural and Fishery Workers	5	
7.	Craft and Related Trade Worker	4	
8.	Plant and Machine Operators and Assemblers	3	
9.	Elementary occupation	2	
10.	unemployed	1	

c. Monthly income of the family

Sl. No	Monthly family income	Scores	Answer
1.	≥184,376	12	
2.	92,191-184,370	10	
3.	68967-92185	6	
4.	46095 - 68961	4	
5.	27654 – 46089	3	

6.	9232 - 27648	2	
7.	≤9226	1	

Kuppuswamy socio-economic status scale

S.No	Score	Socioeconomic Status	Answer
1.	26-29	Upper (I)	
2.	16-25	Upper Middle (II)	
3.	11-15	Lower Middle (III)	
4.	5-10	Upper Lower (IV)	
5.	<5	Lower (V)	

PART I
B. CLINICAL PROFILE

01. No of antenatal visits during pregnancy _____

02. Type of pregnancy

A. Planned

B. Unplanned

03.Order of current pregnancy

A. 1st

B. 2nd

C. 3rd

D. >3

04.Gestational age (in weeks) at the time of delivery _____

05.Number of living children's _____

Specify the age of children's _____

06.Indication for LSCS in current pregnancy _____

07.Initiation of breast feeding

A. Within 1 hour

B. 1-2 hour

C. > 2 hours.

08.Type of feeding to neonate

A. Breast Milk

B. Formula Feed

C. Cow's milk

D. Both A and B

09.Gender of the baby _____

10.Birth weight of the baby_____

11. History of Abortion – Yes / No

If yes specify the

Cause_____.

Gestational weeks_____.

12. History of Infertility – Yes / No

If yes specify the

Cause_____

Treatment taken_____.

13. Please describe the nature of your pain

A. No Pain
B. Mild
C. Discomforting
D. Distressing
E. Horrible
F. Excruciating

14. Where do you feel the pain the most?

A. Incision site
B. Lower abdomen
C. Other _____ (Please specify)

15. On a scale from 0 to 10, please rate your current level of pain (0 = no pain, 10 = maximum pain).

Components	Day 1 (Pretest)	Day 1 (posttest)	Day 3rd Post	Day 5th Post
Resting state				
During movement				
During breastfeeding				

PART 2: LATCH

Day 1 (Pre-test)

	0	1	2	Total
L				
A				
T				
C				
H				

Day 1 (Post-test)

	0	1	2	Total
L				
A				
T				
C				
H				

Day 3rd (Post -test)

	0	1	2	Total
L				
A				
T				
C				
H				

Day 5th (posttest)

	0	1	2	Total
L				
A				
T				
C				
H				

PART 3: Comfort Assessment:

Frequency Likert Scale for Modified Comfort Scale:

Physical comfort	Strongly agree	Agree	Slightly agree	Disagree	*Strongly disagree*
1. I can easily hold my baby and communicate.					
2. I feel relieved after the birth					
3. I feel suffocated by not being able to cope with my current situation.					
4. Tension and gas in my abdomen discomfort me.					
5. It discomforts me that I bleed and have trouble changing pads.					
6. I can cope with my pain; it doesn't discomfort me.					

7. Dizziness discomfort me					
8. I am feeling extremely tired and I want to sleep continuously.					
9. I feel well enough to move comfortably					
10. Having an IV or a needle in my arm discomfort me					
11. I feel discomfort around my episiotomy/surgery area					
12. I'm having trouble breastfeeding my baby					
13. I can sleep and rest comfortably					
14. I am struggling to care for my baby.					

psychospiritual comfort	Strongly agree	Agree	Slightly agree	Disagree	*Strongly disagree*
15. I feel more comfortable when I have my baby with me					
16. I feel very happy					
17.I'm so emotional and touchy right now, I want to cry all the time					
18. Providing information me about my health and the procedures to be performed makes me feel comfortable					
19. Being together more with my wife and baby makes me feel relaxed.					
20. I feel important and valuable					
21. It makes me feel relieved to have someone take care of my baby.					

22. The thought that my husband can be a good father comforts me.					
23. It puts me in comfort that I'm receiving the care I need.					
24. I feel the attention, love, and support of my partner.					

sociocultural comfort	Strongly agree	Agree	Slightly agree	Disagree	*Strongly disagree*
25.I can easily protect and maintain my privacy					
26. I am worried that my social life and work will be affected after birth.					
27. I need a guide/booklet where I can find answers to all my questions about myself					
28.I am worried that we will have financial difficulties.					
29. The food served at the hospital is so bad I can't eat it.					
30. I worry that I will not be able to adequately care for my baby and/or other children.					
31. Not being able to bath/shower discomfort me.					
32. DoI have enough information about what I may experience and what I need to do in the postpartum period.					
33. It discomfort me that the toilets are unhygienic.					
34. Bebe I need a guide/booklet where I can find answers to all my questions about my baby.					

Comfort Score	Day 1 (posttest)	Day 5th (posttest)

ANNEXURE 3

DATA COLLECTION TOOL(Hindi)

निर्देश: कृपया उचित प्रतिक्रिया के खिलाफ एक टिक मार्क (√) लगाएं और जहां भी लागू हो रिक्त स्थान भरें।

भाग I

सामाचजक जनसांखिकीय डेटा

01. आयु (वर्षों में) ____

02. धमक ____

03. शैचिक खस्थचत –
a. क ई औपिाररक चशिा नहीं
b. प्राथचमक स्तर
c. माध्यचमक स्तर
d. उच्चतर माध्यचमक
e. स्नातक और उससे ऊपर

04. र जगार की खस्थचत-
a. बेर जगार / गृचहणी
b. स्व-चनय चजत
c. सरकारी कमकिारी
d. चनजी कमकिारी
e. यचद अन्म
चनचदकष्ट _____

05. चनवास-
a. ग्रामीण
b. शहरी
c.अधक-शहरी

06. चववाह की अवचध
a. <1 वर्षक
b.1 वर्षक - 3 वर्षक

c. 3 वर्षक - 5 वर्षक
d. >5 वर्षक

07. आहार का प्रकार
a. शाकाहारी
b. मांसाहारी
c. यचद अन्म चनचदकष्ट करते हैं ____

08. पररवार का प्रकार
a. परमाणु
b. संयुक्त
c. चवस्ताररत

09. सामाजिक-आर्थिक स्थिति

क. मुखिया की शिक्षा

क्रमसंख्या	मुखिया की शिक्षा	अंक	उत्तर
क	पेशा या सम्मान	7	
ख.	स्नातक	6	
ग	इंटरमीडिएट या डिप्लोमा	5	
घ.	हाई स्कूल का प्रमाण पत्र	4	
ङ	मिडिल स्कूल का प्रमाण पत्र	3	
च.	प्राथमिक विद्यालय का प्रमाण पत्र	2	
छ	अशिक्षित	1	

ख. मुखिया का व्यवसाय

क्रमसंख्या	मुखिया का व्यवसाय	अंक	उत्तर
क	विधायक, वरिष्ठ अधिकारी और प्रबंधक	10	
ख.	पेशेवरों	9	
ग	तकनीशियन और एसोसिएट प्रोफेशनल	8	
घ.	क्लर्कों	7	

ङ	कुशल श्रमिक और दुकान और बाजार बिक्री कार्यकर्ता	6	
च.	कुशल कृषि और मत्स्य पालन श्रमिक	5	
छ	शिल्प और संबंधित व्यापार कार्यकर्ता	4	
ज	संयंत्र और मशीन ऑपरेटर और असेंबलर्स	3	
	प्राथमिक व्यवसाय	2	
	बेकार	1	

ग. परिवार की मासिक आय

क्रमसंख्या	परिवार की मासिक आय	अंक	उत्तर
क	≥184,376	12	
ख.	92,191-184,370	10	
ग	68967-92185	6	
घ.	46095 - 68961	4	
ङ	27654 – 46089	3	
च.	9232 - 27648	2	
छ	≤9226	1	

कुप्पुस्वामी सामाजिक-आर्थिक स्थिति का पैमाना

क्रमसंख्या		सामाजिक आर्थिक स्थिति	
क	26-29	ऊपरी (I)	
ख.	16-25	ऊपरी मध्य (II)	
ग	11-15	निम्न मध्य (III)	
घ.	5-10	ऊपरी निचला (IV)	
ङ	<5	लोअर (V)	

भाग I
बी. क्लिनिकल प्रोफ़ाइल

01. गर्भावस्था के दौरान प्रसवपूर्व मुलाकातों की संख्या _____

02. गर्भावस्था का प्रकार

एक योजनाबद्ध

बी अनियोजित

03.वर्तमान गर्भावस्था का क्रम

ए. 1

बी. 2

सी. 3

घ. >3

04.प्रसव के समय गर्भकालीन आयु (सप्ताह में) _____

05.जीवित बच्चों की संख्या _____

बच्चों की आयु निर्दिष्ट करें _____

06.वर्तमान गर्भावस्था में एलएससीएस के लिए संकेत _____

07.स्तनपान की शुरूआत

ए. 1 घंटे के अंदर

बी. 1-2 घंटा

सी. > 2 घंटे.

08.नवजात शिशु को दूध पिलाने का प्रकार

ए. स्तन का दूध

बी. फार्मूला फ़ीड

सी. गाय का दूध

D. A और B दोनों

09.शिशु का लिंग _____

10.बच्चे का जन्म के समय वजन_____

11. गर्भपात का इतिहास - हाँ/नहीं

यदि हाँ तो निर्दिष्ट करें

कारण_____।

गर्भकालीन सप्ताह_____।

12. बांझपन का इतिहास - हाँ/नहीं

यदि हाँ तो निर्दिष्ट करें

कारण_____

उपचार लिया गया_____.

13. कृपया अपने दर्द की प्रकृति का वर्णन करें

उ. कोई दर्द नहीं

बी. हल्का

सी. असुविधाजनक

डी. कष्टकारी ई. भयानक

एफ. कष्टदायी

14. आपको सबसे अधिक दर्द कहाँ महसूस होता है?

ए. चीरा स्थल

बी. निचला पेट ---------(कृपया निर्दिष्ट करें)

सी. अन्य

15. 0 से 10 के पैमाने पर, कृपया अपने दर्द के वर्तमान स्तर को रेटिंग दें (0=कोई दर्द नहीं, 10=अधिकतम दर्द)।

अवयव	दिन 1 (प्रीटेस्ट)	दिन 1 (पश्चात परीक्षण)	दिन 3 (पश्चात परीक्षण)	दिन 5 (पश्चात परीक्षण)
आराम की स्थिति				
आंदोलन के दौरान				
स्तनपान के दौरान				

भाग ।।

Day 1 (Pre-test)

	0	**1**	**2**	**Total**
L				
A				
T				
C				
H				

Day 1 (Post-test)

	0	**1**	**2**	**Total**
L				
A				
T				
C				
H				

Day 3rd (Post -test)

	0	1	2	Total
L				
A				
T				
C				
H				

Day 5th (posttest)

	0	1	2	Total
L				
A				
T				
C				
H				

भाग : आराम का आकलन

संशोधित आराम स्केल के लिए फ़्रीक्वेंसी लिकर्ट स्केल:

शारीरिक आराम	दृढ़तापूर्वक सहमत	सहमत	थोड़ा सहमत	असहमत	दृढ़ता से असहमत
1. मैं अपने बच्चे को आसानी से पकड़ सकती हूं और बातचीत कर सकती हूं।					
2. जन्म के बाद मुझे राहत महसूस होती है					
3. 3. मैं अपनी वर्तमान स्थिति से निपटने में सक्षम नहीं होने के कारण घुटन महसूस करता हूं।					
4. मेरे पेट में तनाव और गैस मुझे परेशान करती है।					
5.इससे मुझे असुविधा होती है कि मुझे रक्तस्राव होता है और पैड बदलने में परेशानी होती है।					
6. मैं अपने दर्द का सामना कर सकता हूं, इससे मुझे परेशानी नहीं होती					
7. चक्कर आना मुझे परेशान करता है					
8. मैं बहुत थका हुआ महसूस कर रहा हूं और सोना चाहता हूं					
9. मैं आराम से चलने के लिए काफी अच्छा महसूस करता हूं					

10. मेरी बांह में आईवी या सुई होने से मुझे असुविधा होती है					
11.मुझे अपने एपीसीओटॉमी/सर्जरी क्षेत्र के आसपास असुविधा महसूस होती है					
12. मुझे अपने बच्चे को स्तनपान कराने में परेशानी हो रही है					
13.मैं आराम से सो सकता हूँ और आराम कर सकता हूँ					
14. मैं अपने बच्चे की देखभाल के लिए संघर्ष कर रही हूं।					

मनो-आध्यात्मिक आराम	दृढ़तापूर्वक सहमत	सहमत	थोड़ा सहमत	असहमत	दृढ़ता से असहमत
15. जब मेरा बच्चा मेरे साथ होता है तो मैं अधिक सहज महसूस करती हूं					
16. मुझे बहुत ख़ुशी महसूस हो रही है					
17. मैं इस समय बहुत भावुक और भावुक हूं, मैं हर समय रोना चाहता हूं					
18. मुझे अपने स्वास्थ्य और की जाने वाली प्रक्रियाओं के बारे में जानकारी प्रदान करने से मुझे सहज महसूस होता है					
19. अपनी पत्नी और बच्चे के साथ अधिक समय तक रहने से मुझे आराम महसूस होता है।					
20. मैं महत्वपूर्ण और मूल्यवान महसूस करता हूं					
21. यह देखकर मुझे राहत महसूस होती है कि कोई मेरे बच्चे की देखभाल कर रहा है।					
22. यह विचार कि मेरा पति एक अच्छा पिता हो सकता है, मुझे सुकून देता है।					

23. इससे मुझे तसल्ली मिलती है कि मुझे वह देखभाल मिल रही है जिसकी मुझे ज़रूरत है।					
24. मैं अपने साथी का ध्यान, प्यार और समर्थन महसूस करता हूं।					

सामाजिक-सांस्कृतिक आराम	दृढ़तापूर्वक सहमत	सहमत	थोड़ा सहमत	असहमत	दृढ़ता से असहमत
25. मैं आसानी से अपनी गोपनीयता की रक्षा और रखरखाव कर सकता हूं					
26. मुझे चिंता है कि जन्म के बाद मेरा सामाजिक जीवन और काम प्रभावित होगा।					
27. मुझे एक मार्गदर्शिका/पुस्तिका की आवश्यकता है जहां मैं अपने बारे में अपने सभी प्रश्नों के उत्तर पा सकूं					
28. मुझे चिंता है कि हमें वित्तीय कठिनाइयाँ होंगी।					
29. अस्पताल में परोसा जाने वाला खाना इतना ख़राब है कि मैं इसे खा नहीं सकता।					
30. मुझे चिंता है कि मैं अपने बच्चे और/या अन्य बच्चों की पर्याप्त देखभाल नहीं कर पाऊँगी।					
31. स्नान/स्नान न कर पाने से मुझे परेशानी होती है।					
32. प्रसवोत्तर अवधि में मुझे क्या अनुभव हो सकता है और मुझे क्या करने की आवश्यकता है, इसके बारे में डीओआई के पास पर्याप्त जानकारी है।					
33. मुझे यह देखकर परेशानी होती है कि शौचालय गंदे हैं।					
34. मुझे एक गाइड/पुस्तिका की आवश्यकता है जहां मैं अपने बच्चे के बारे में अपने सभी सवालों के जवाब पा सकूं।					

आरामदायक स्कोर	दिन 1 (पश्चात परीक्षण)	दिन 5वाँ (पश्चात परीक्षण)

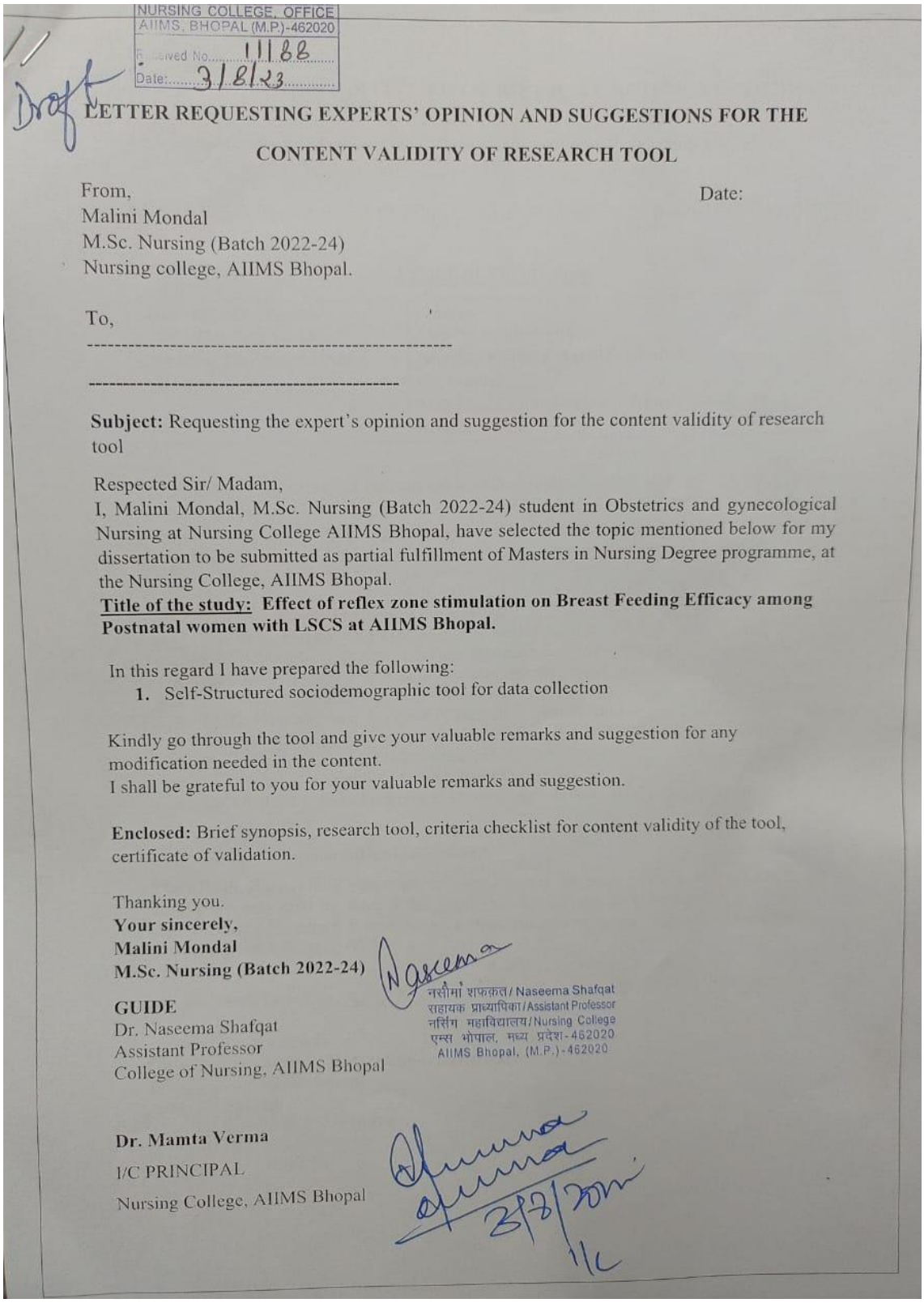
ANNEXURE 4

LIST OF EXPERTS (TOOL AND INTERVENTION VALIDATIONS)

S.No.	NAME OF EXPERTS	INSTITUTION	DESIGNATION
1.	Dr. Lilly Podder	AIIMS Bhopal	Associate Professor
2.	Mrs. Anju Verma	CON, SGPGIMS	Associate Professor
3.	Dr. Seema Rani Chopra	GCON, Surat	Associate Professor
4.	Moitreyee Choudhuri	GCON MCH	Professor
5.	Dr. Chandakala Janghel	GCON, Raipur	Associate Professor
6.	Dr. Sushila Bais	P.G CON Bhilai	Professor
7.	Mitali Adhikari	GCON District Hospital, Howrah	Associate Professor Cum Acting Principal
8.	Manasi Jana	GCON, Diamond Harbour College & Hospital	Associate Professor Cum Acting Principal
9.	Dr. Smritikana Mani	The Neotia University CON	Dean Nursing
10.	Ms. Taniya Bera	Apollo CON, Kolkata	Associate Professor
11.	Tiki Hansda	CON, MMCH, Paschim Medinipur	Senior Lecturer
12.	Dr. Rupashree Dasgupta	CON IGIMS, Patna	Associate Professor Cum vice Principal
13.	Dr. Danish Javed	AIIMS Bhopal AYUSH	Senior Medical Officer AYUSH

ANNEXURE 5

LETTER REQUESTING EXPERTS OPINIONS AND SUGGESTION FOR THE CONTENT VALIDITY



NURSING COLLEGE, OFFICE
AIIMS, BHOPAL (M.P.)-462020
Received No. 11188
Date: 31/8/23

Draft

LETTER REQUESTING EXPERTS' OPINION AND SUGGESTIONS FOR THE CONTENT VALIDITY OF RESEARCH TOOL

From,
Malini Mondal
M.Sc. Nursing (Batch 2022-24)
Nursing college, AIIMS Bhopal.

Date:

To,

Subject: Requesting the expert's opinion and suggestion for the content validity of research tool

Respected Sir/ Madam,
I, Malini Mondal, M.Sc. Nursing (Batch 2022-24) student in Obstetrics and gynecological Nursing at Nursing College AIIMS Bhopal, have selected the topic mentioned below for my dissertation to be submitted as partial fulfillment of Masters in Nursing Degree programme, at the Nursing College, AIIMS Bhopal.
Title of the study: Effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS at AIIMS Bhopal.

In this regard I have prepared the following:
1. Self-Structured sociodemographic tool for data collection

Kindly go through the tool and give your valuable remarks and suggestion for any modification needed in the content.
I shall be grateful to you for your valuable remarks and suggestion.

Enclosed: Brief synopsis, research tool, criteria checklist for content validity of the tool, certificate of validation.

Thanking you.
Your sincerely,
Malini Mondal
M.Sc. Nursing (Batch 2022-24)

GUIDE
Dr. Naseema Shafqat
Assistant Professor
College of Nursing, AIIMS Bhopal

Naseema

नसीमा शफकत / Naseema Shafqat
सहायक प्राध्यापिका / Assistant Professor
नर्सिंग महाविद्यालय / Nursing College
एम्स भोपाल, मध्य प्रदेश-462020
AIIMS Bhopal, (M.P.)-462020

Dr. Mamta Verma
I/C PRINCIPAL
Nursing College, AIIMS Bhopal

Mamta Verma
3/8/2023
I/C

ANNEXURE 6

EVALUATION CRITERIA FOR VALIDATION OF TOOL

Items	Highly relevant (5)	Quite relevant (4)	Somewhat relevant (3)	Not relevant (2)	remarks

PART I- PARTICIPANTS INFORMATION

- We need your expertise judgment on degree of relevancy of each item to the measure domain. If there are any suggestions and modifications, please mention in the remark column.
- Your expert opinion and kind cooperation will be highly appreciated.

Question number	Highly relevant 4	Quite relevant 3	Somewhat relevant 2	Not relevant 1	Remarks
1					
2					
3					
4					
5					
6					
7					
8					

ANNEXURE 7

CONTENT VALIDITY CERTIFICATE (TOOL)

Certificate of Validation

This is to certify that Questionnaire/Tool constructed by Malini Mondal, M.Sc. Nursing 2022-24 batch student, Nursing College, AIIMS Bhopal, to be used in her study titled - "**Effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS at AIIMS Bhopal"** has been validated by me and is found to be valid/ appropriate with/without suggestion.

Overall Remark:

Signature:

Name of the Expert:

Designation:

Name of the Institution:

Official Seal:

Date:

Place:

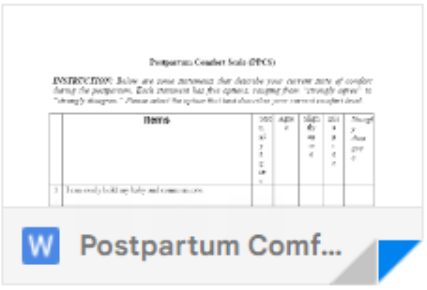
ANNEXURE 8

PERMISSION FOR PPCQ TOOL

heryilmaz <heryilmaz@marmara.edu.tr>
to me

Dear Malini,
I apologize for the delay caused by my workload. The English version of the scale and the published article (so that you can cite it in your references) are attached.
Best regards,

2 attachments • Scanned by Gmail



ANNEXURE 9

CERTIFICATE OF TRANSLATION

Hindi Validation Certificate

This is to certify that, Malini Mondal; M.Sc. Nursing student of Nursing College, AIIMSBhopal conducting Research on the topic "Effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS at AIIMS Bhopal".

This tools for data collection is translated from English language to Hindi language by me.The Hindi tool is valid to collect the data for Research.

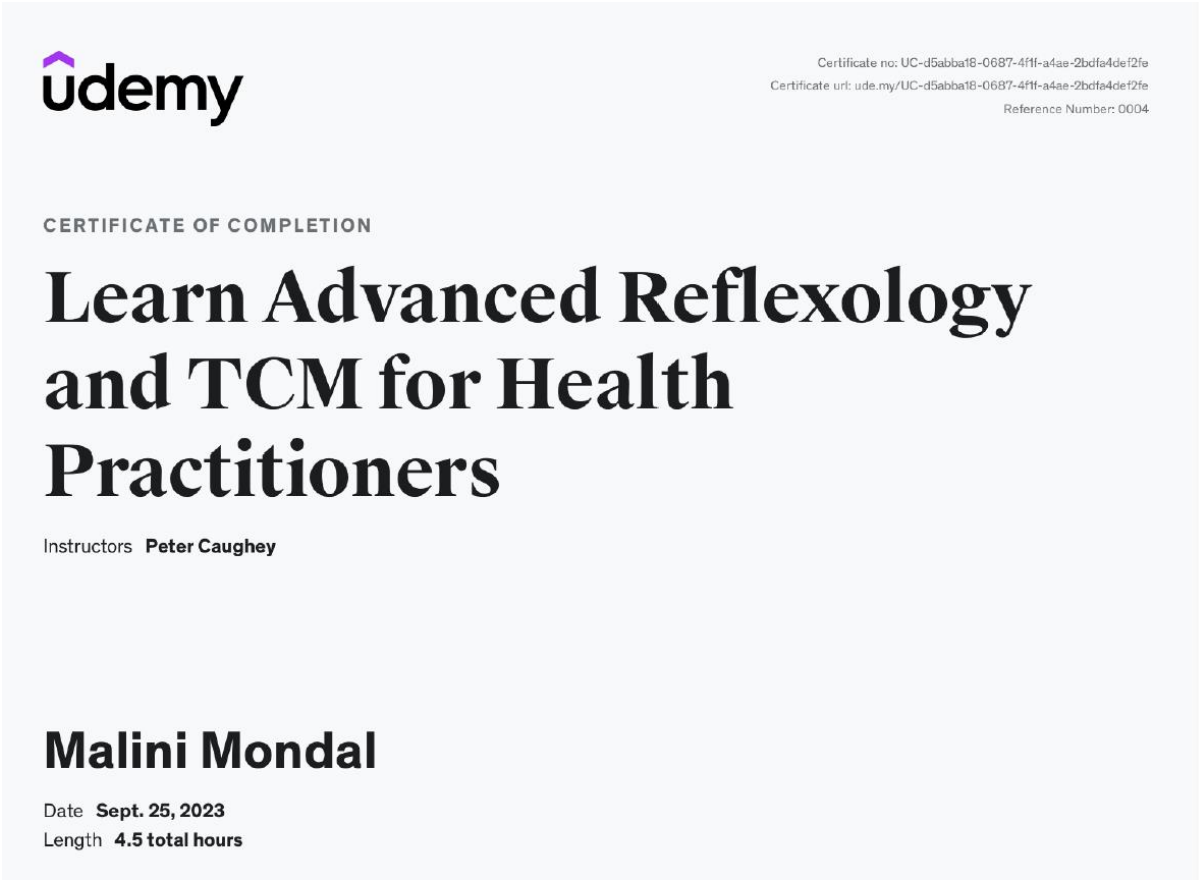
Shri Jashvantbhai Ranchhodbhai (A.T. Teacher The secondary school chhaparvad.)

Seal & Signature

The Secondary School Dist. Dahod Chhaparvad Ta. Singvad

ANNEXURE 9

CERTIFICATE OF REFLEXOLOGY



udemy

Certificate no: UC-d5abba18-0687-4f1f-a4ae-2bdfa4def2fe
Certificate url: ude.my/UC-d5abba18-0687-4f1f-a4ae-2bdfa4def2fe
Reference Number: 0004

CERTIFICATE OF COMPLETION

Learn Advanced Reflexology and TCM for Health Practitioners

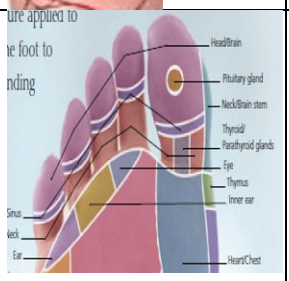
Instructors **Peter Caughey**

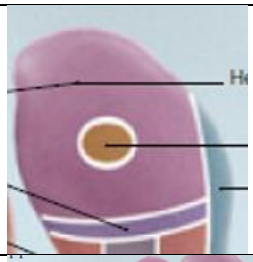
Malini Mondal

Date **Sept. 25, 2023**
Length **4.5 total hours**

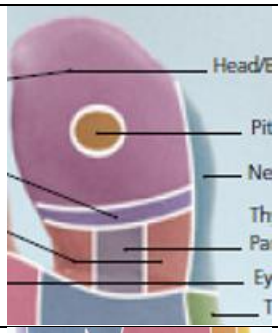
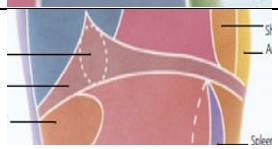
ANNEXURE 10

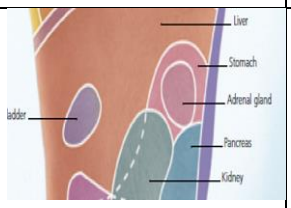
INTERVENTION DETAILS

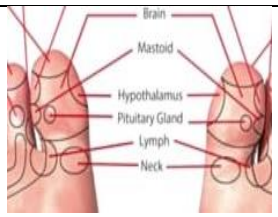
Reflex zones	Techniques	Time duration	Area of foot	Physiology
Kidney area	Press and release	5 times 30 sec		To promote elimination from body.
Head & sinus	Beck method, finger walking	1 min		promote relaxation, reduce tension, improve circulation, and stimulate the body's natural healing processes in the corresponding areas. Sinus Health Support: Postnatal women may experience sinus-related issues due to various factors such as hormonal changes, stress, or immune system fluctuations. Reflexology on the sinus reflex points might aim to alleviate discomfort, promote drainage, and support sinus health. Stress Reduction: Reflexology techniques can induce relaxation and reduce stress levels. Postnatal women often experience stress due to adjusting to a new routine or hormonal changes. Reflexology on the sinus reflex points might contribute to overall relaxation and stress relief. Improving Circulation: Reflexology is believed to enhance blood circulation throughout the body. Stimulating the sinus reflex points might potentially promote better blood flow to the sinus area, aiding in relaxation and relief of discomfort.

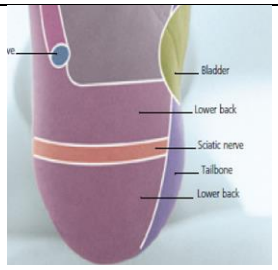
				Clearing Nasal Passages: Reflexology on the sinus reflex points might potentially aid in clearing nasal passages and promoting easier breathing for postnatal women experiencing congestion or sinus pressure. Emotional Well-being
Pituitary gland	Thumb walking, Rotation on the point Press & release.	1 min		Hormonal secretion, (oxytocin, Prolactin) Lactation, involution of uterus.
Chest area, Lung Area, Shoulder	Thumb walking, press and slide, knuckle	1 min		*Improved Respiratory Function: Postnatal women might experience respiratory changes due to various factors such as the physical strain of childbirth, hormonal shifts, or stress. Reflexology aimed at the lung reflex points is thought to support healthy lung function, potentially aiding in relieving tension and promoting relaxation in the chest area. *Stress Reduction-Reflexology on the lung reflex points may help reduce stress levels, induce relaxation, and provide a sense of calmness. *Enhanced Circulation: Stimulating the lung reflex points might potentially promote better blood flow to the lungs, supporting their function and aiding in oxygenation. *Relieving Shoulder Tension: Many postnatal women may experience shoulder tension or discomfort due to changes in posture, stress, or carrying and feeding the newborn. Reflexology on the shoulder reflex points might aim to alleviate tension and discomfort in the shoulder area.

				*Stress Reduction: Reflexology techniques can induce relaxation and reduce stress levels. *Improving Circulation: Reflexology is believed to enhance blood circulation throughout the body. Stimulating the shoulder reflex points might potentially promote better blood flow to the shoulder area, aiding in relaxation and relief of tension. *Supporting Posture: Reflexology on the shoulder reflex points might assist in promoting better posture and relieving muscle tension, contributing to overall spinal health and comfort.
Breast	Finger walk, four finger press	1 min		breast health or lactation during breastfeeding, promoting relaxation and potentially supporting breastfeeding. relaxation and stress relief, which can indirectly support breastfeeding by aiding relaxation and reducing tension Lymphatic Drainage: The breasts contain lymph nodes and ducts. Reflexology on the breast reflex points may potentially aid in improving lymphatic circulation, supporting lymphatic drainage, and overall breast health. Milk Production and Flow: For breastfeeding women, reflexology on the breast reflex points might potentially help stimulate milk production or relieve issues related to blocked milk ducts by promoting relaxation and improved circulation in the breast area. Stress Reduction: Reflexology techniques can induce relaxation and reduce stress levels. For postnatal women experiencing stress related to breastfeeding or

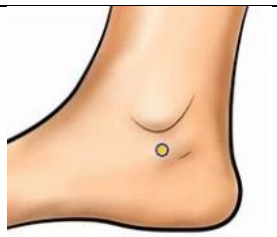
				adjusting to new routines, reflexology on the breast reflex points might contribute to overall relaxation and well-being. Emotional Well-being: Reflexology's relaxation effects may positively impact emotional well-being by reducing anxiety and promoting relaxation.
Thyroid and parathyroid glands	Press and release,	1 min		hormonal balance, which might indirectly impact lactation. promoting balance in calcium levels, which could indirectly influence lactation.
Diaphragm, Solar plexus	Knuckle, press and slide	1 min		After childbirth, some women might experience changes in breathing patterns or tension in the chest due to various factors like stress, posture changes, or discomfort. Reflexology on the diaphragm point could help alleviate such tension and support more comfortable breathing. Stress Reduction: Postnatal women often experience stress due to the demands of caring for a newborn, hormonal fluctuations, lack of sleep, and adjustments to new routines. Reflexology, including working on the diaphragm reflex point, may help in reducing stress levels, promoting relaxation, and providing a sense of well-being. Hormonal Balance: Reflexology is thought to influence the endocrine system positively. Postnatal hormonal fluctuations can affect mood and overall well-being. By working on reflex points related to hormonal glands, including the diaphragm point, reflexology might help support hormonal balance.

				Pain Relief and Relaxation: Reflexology is known for its potential to alleviate pain and induce relaxation. Postnatal women might experience discomfort, particularly in the lower back, pelvis, or abdominal regions. Reflexology techniques, including targeting the diaphragm reflex point, could potentially relieve such discomfort and promote relaxation. Emotional Support: Postnatal care involves emotional adjustments and challenges. Reflexology's relaxation effects may help reduce anxiety, stress, and promote a sense of calmness and emotional well-being.
Adrenal gland & Liver (rt foot)	Thumb walking, Press & slide, Single knuckle method.	1 min		Stress Reduction: Postnatal women often experience heightened stress levels due to various factors such as adjusting to the demands of caring for a newborn, sleep disturbances, hormonal fluctuations, and changes in routine. Reflexology on the adrenal gland reflex points is thought to help reduce stress and induce relaxation by potentially affecting the body's stress response. Hormonal Balance: The adrenal glands play a crucial role in producing hormones, including stress hormones like cortisol. Postnatal hormonal fluctuations can affect mood, energy levels, and overall well-being. Reflexology on the adrenal gland reflex points is believed to help balance hormone levels, potentially supporting postnatal hormonal changes. Reflexology on the liver reflex point is thought to help balance hormone levels, potentially supporting the body's hormonal

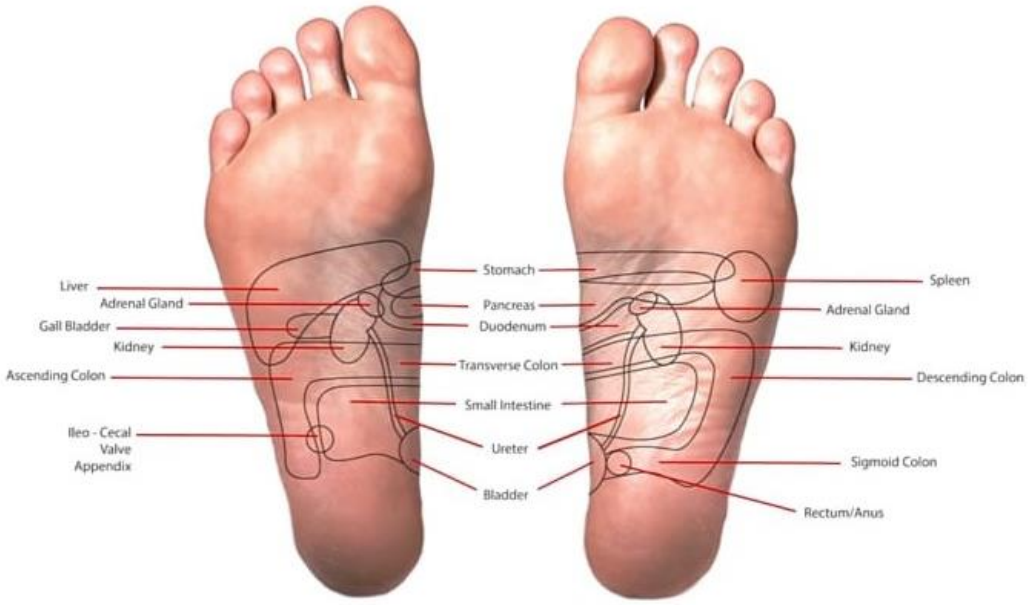
				adjustments during the postnatal period. Energy Regulation: Reflexologists believe that working on the adrenal gland reflex points can help regulate energy levels in the body. Postnatal women may experience fatigue or fluctuations in energy levels, and reflexology might assist in restoring balance and vitality. Detoxification Support: The liver plays a crucial role in detoxifying the body. Postnatal women might benefit from reflexology on the liver reflex point, as it is believed to potentially support the liver's detoxification processes, aiding in the elimination of toxins from the body. Improved Digestion: The liver is involved in bile production, which aids in digestion. Reflexology on the liver reflex point might potentially assist in optimizing digestive function and relieving any discomfort related to digestion that postnatal women might experience.
Lymph	Press and release, Rotation on the point	30 sec		Lymphatic Drainage, Immune System Support: Enhancing lymphatic flow through reflexology may have indirect benefits on the immune system. Strengthening lymphatic function might support the body's defense mechanisms during the postnatal period when the immune system might be slightly compromised. Toxin Elimination: Reflexology on the lymph nodes points is believed to aid in the elimination of toxins and metabolic waste products. This can be beneficial

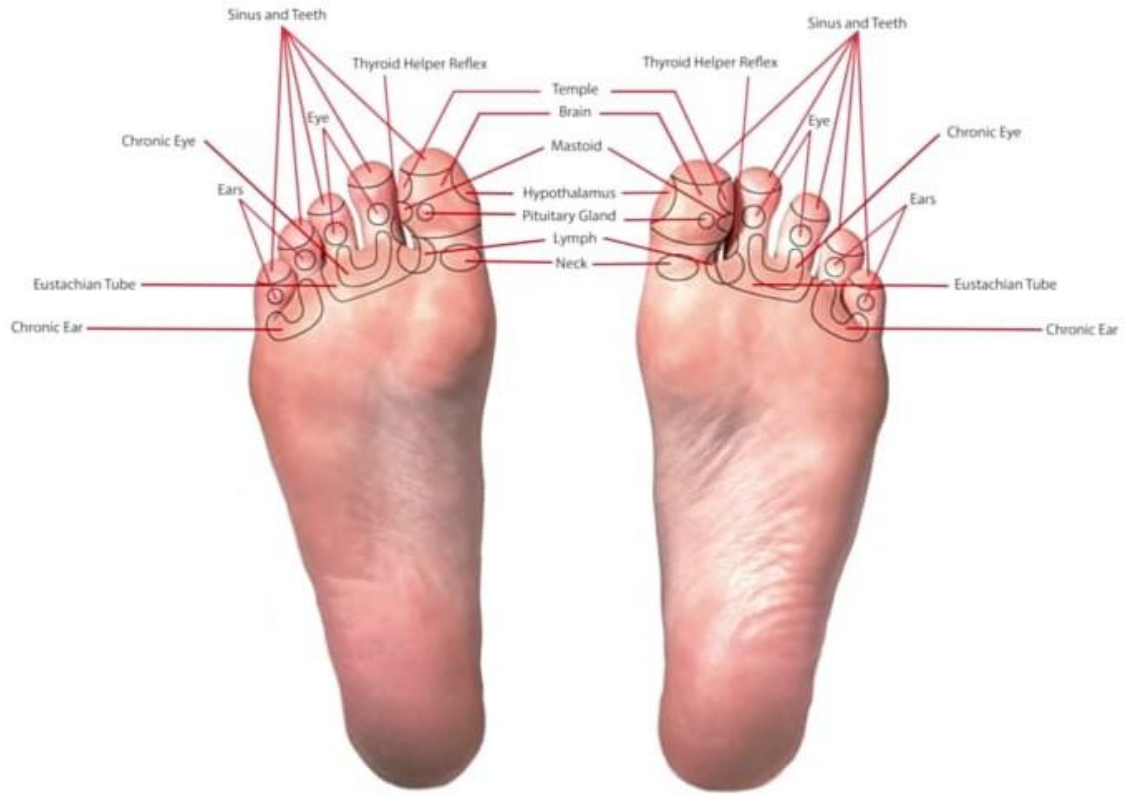
				for postnatal women as their bodies undergo significant changes and eliminate waste following childbirth. Relaxation and Stress Reduction: Reflexology techniques can induce relaxation and reduce stress levels. For postnatal women, this relaxation effect might help reduce stress, contributing to overall well-being and potentially supporting immune function indirectly. Fluid Balance: Postnatal women might experience fluid retention, and reflexology on the lymph nodes points may potentially assist in balancing fluids in the body, aiding in reducing swelling and promoting comfort.
Bladder, Lower back	Thumb walking, press and slide, Single knuckle method	1 min		Bladder Function: Reflexology on the bladder reflex points is thought to support and promote better bladder function. Postnatal women may sometimes experience issues related to urinary incontinence or discomfort due to the changes in the pelvic area after childbirth. Reflexology might potentially aid in relieving such discomfort and supporting bladder health. Relaxation and Stress Reduction: Reflexology techniques can induce relaxation and reduce stress levels. Fluid Regulation: Postnatal women might experience fluid retention or other imbalances in the body. Reflexology on the bladder reflex points might assist in promoting fluid balance, potentially aiding in reducing swelling or discomfort. Improved Circulation: Reflexology is believed to enhance blood circulation throughout the body. Stimulating the bladder reflex points might potentially promote better blood

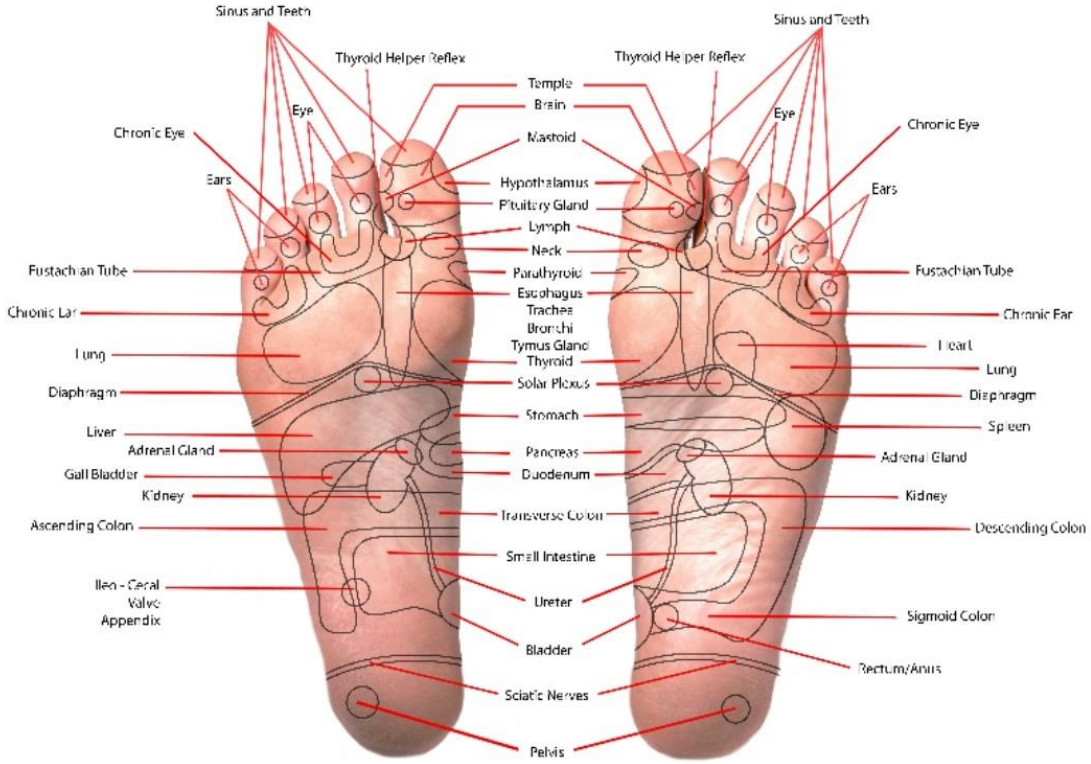
				flow to the pelvic region, supporting overall health in that area. Alleviating Lower Back Discomfort: Many postnatal women experience lower back discomfort due to the physical strain of pregnancy, childbirth, and caring for a newborn. Reflexology on the lower back reflex points might aim to alleviate tension and discomfort in this area by promoting relaxation and improved circulation. Supporting Posture: Reflexology on the lower back reflex points might assist in promoting better posture and relieving muscle tension, contributing to overall spinal health and comfort.
Uterus	Rotating on a point and finger rotation	1 min		Uterine Health: Reflexology on the uterus reflex points is thought to support uterine health. Postnatal women may experience changes in the uterus due to childbirth, and reflexology might aim to aid in the restoration of uterine tone or balance. Hormonal Balance: After childbirth, women undergo significant hormonal changes. Reflexology on the uterus reflex points is believed to help balance hormone levels, potentially supporting the body's hormonal adjustments during the postnatal period. Postpartum Recovery: Reflexology might assist in the overall recovery process after childbirth. Stimulating the uterus reflex points might potentially aid in promoting healing and recovery of the uterus. Emotional Well-being: Reflexology's relaxation effects can contribute to improved emotional well-being by reducing anxiety and promoting relaxation. Balancing Energy Flow:

				Reflexology aims to restore balance and energy flow within the body. Stimulating the uterus reflex points might help promote better energy flow and vitality, potentially supporting postnatal recovery.
ovary	Rotating on a point and press and release	1.		Hormonal Balance: After childbirth, women undergo significant hormonal changes. Reflexology on the ovarian reflex points is thought to help balance hormone levels, potentially supporting the body's adjustment to postnatal hormonal fluctuations. Reproductive Health Support: Reflexology is believed to assist in promoting reproductive health. Stimulating the ovarian reflex points may potentially aid in supporting ovarian function and overall reproductive health in postnatal women. Stress Reduction: Reflexology techniques can induce relaxation and reduce stress levels. For postnatal women experiencing stress due to hormonal changes or adjusting to new routines, reflexology on the ovarian reflex points might contribute to overall relaxation and well-being. Emotional Well-being: Reflexology's relaxation effects can positively impact emotional well-being by reducing anxiety and promoting relaxation.

POINTS OF FEET






Sinus and Teeth
Thyroid Helper Reflex
Temple
Brain
Eye
Chronic Eye
Mastoid
Ears
Hypothalamus
Pituitary Gland
Lymph
Neck
Eustachian Tube
Parathyroid
Esophagus
Chronic Ear
Trachea
Bronchi
Tymus Gland
Lung
Thyroid
Diaphragm
Solar Plexus
Stomach
Liver
Spleen
Adrenal Gland
Pancreas
Gall Bladder
Duodenum
Kidney
Transverse Colon
Ascending Colon
Descending Colon
Small Intestine
Ileo - Cecal Valve
Appendix
Ureter
Sigmoid Colon
Bladder
Rectum/Anus
Sciatic Nerves
Pelvis
Sinus and Teeth
Thyroid Helper Reflex
Eye
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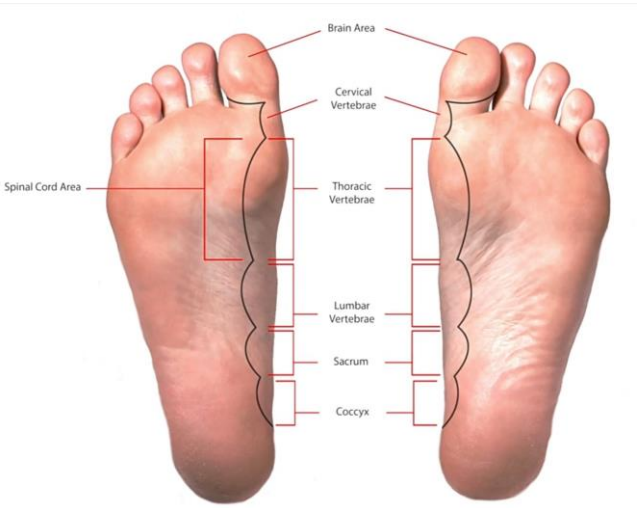
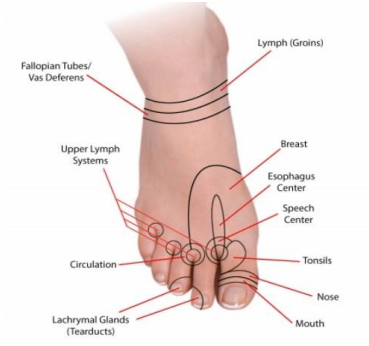
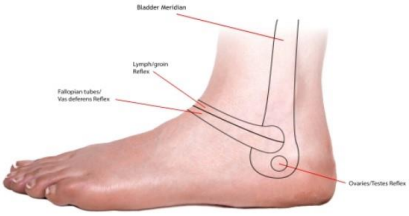
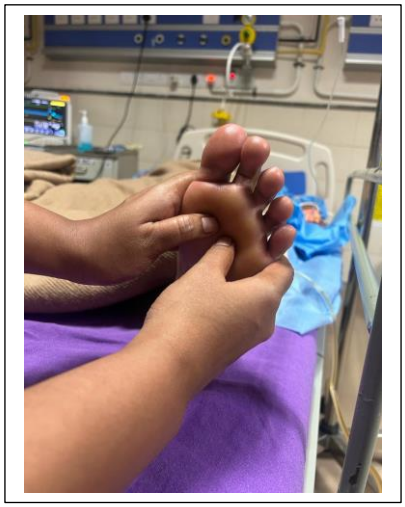
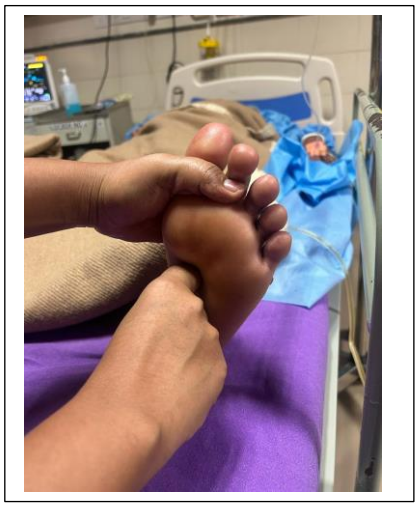
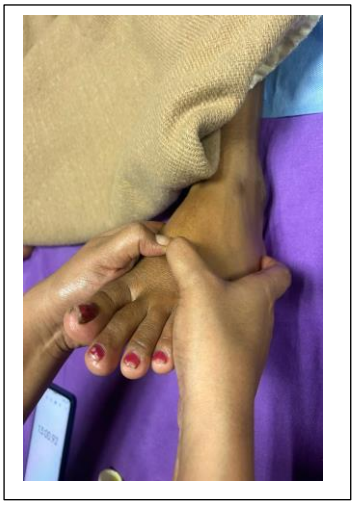
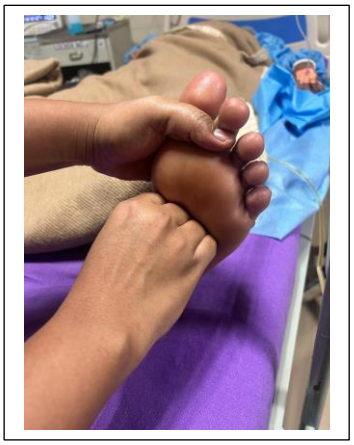
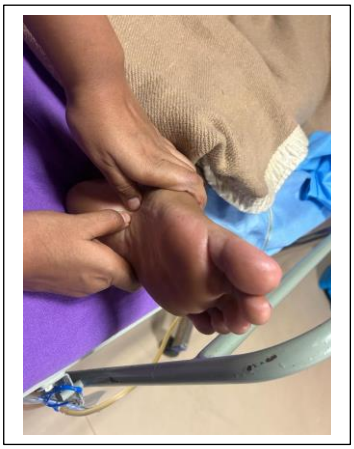
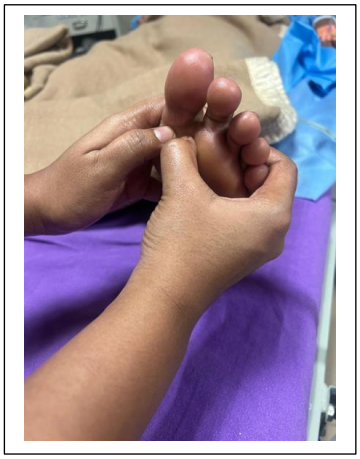
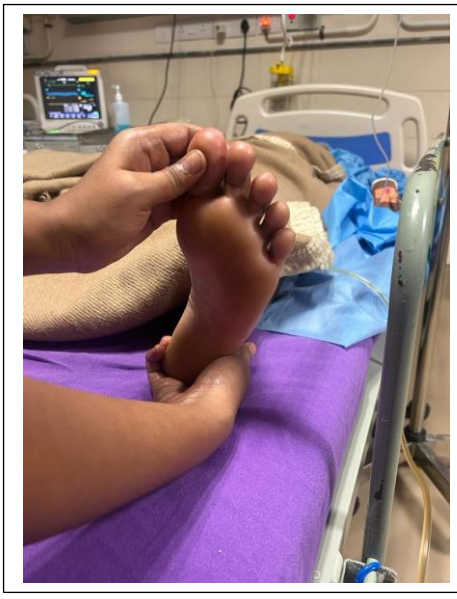
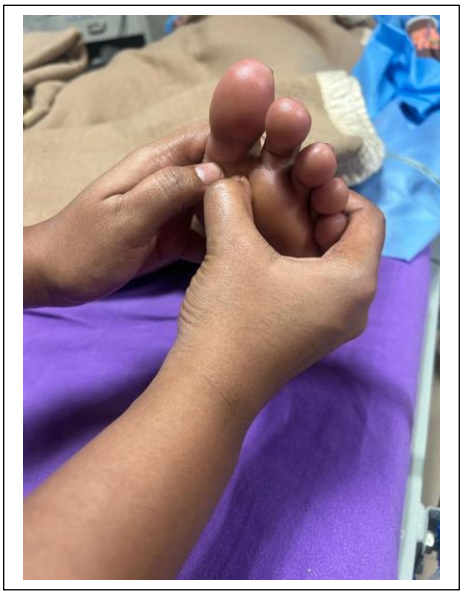
Kidney
Descending Colon
Sigmoid Colon


Brain Area
Cervical Vertebrae
Spinal Cord Area
Thoracic Vertebrae
Lumbar Vertebrae
Sacrum
Coccyx


Lymph (Groins)
Fallopian Tubes/ Vas Deferens
Upper Lymph Systems
Breast
Esophagus Center
Speech Center
Circulation
Tonsils
Nose
Lachrymal Glands (Tearducts)
Mouth

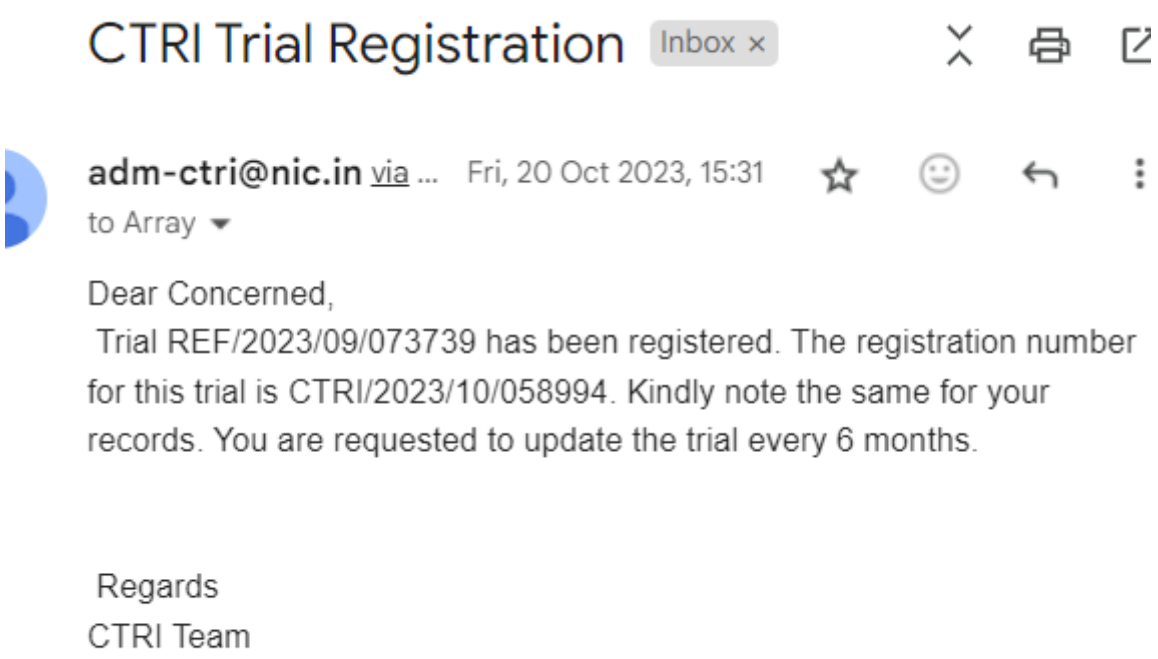
Kidney Meridian
Lymph/groin Reflex
Fallopian tubes/ Vas deferens Reflex
Uterus/Prostate Reflex
Vagina/Penis Reflex


Bladder Meridian
Lymph/groin Reflex
Fallopian tubes/ Vas deferens Reflex
Ovaries/Testes Reflex

ANNEXURE 11

CTRI REGISTRATION



CTRI Trial Registration Inbox ×

adm-ctri@nic.in via ... Fri, 20 Oct 2023, 15:31

to Array

Dear Concerned,

Trial REF/2023/09/073739 has been registered. The registration number for this trial is CTRI/2023/10/058994. Kindly note the same for your records. You are requested to update the trial every 6 months.

Regards

CTRI Team

ANNEXURE 12

PARTICIPATION INFORMATION SHEET (ENGLISH)

STUDY TITLE: Effect of reflex zone stimulation on Breast feeding Efficacy among Postnatal women with LSCS in AIIMS Bhopal.

Student:

MALINI MONDAL

M.sc nursing student (2022-2024 batch)

Obstetric and gynecological nursing

College of nursing, AIIMS, Bhopal.

Guide

Mrs. NASEEMA SHAFQAT, Assistant Professor Obstetrics and Gynecological Nursing

College of Nursing, AIIMS, Bhopal.

Co guide:

Mrs. Geeta Bhardwaj. Assistant Professor Obstetrics and Gynecological Nursing

College of Nursing, AIIMS, Bhopal.

Dr . Bharti Singh, Assistant Professor ,Obstetrics and Gynecology.

Introduction:

I am conducting a study to assess the effect of reflex zone stimulation on Breast Feeding Efficacy among Postnatal women with LSCS. Reflexology is a therapeutic method of relieving pain by stimulating predefined pressure points on the feet and hands. It is also effective for promoting good health and for preventing illness as it may be for relieving symptoms of stress, injury, and illness. Although reflex zone stimulation is an effective method for breast milk secretion. This method is useful for post caesarean mothers to prevent the use of drugs in lactation that may harm to the baby. Lactation is under the control of numerous exocrine glands particularly the pituitary hormones prolactin and oxytocin. By giving pressure on the toe, it gives signal to hypothalamus it stimulates pituitary gland and produce oxytocin which helps to increase breast milk. For these routine procedures will not be affected. Mother can breastfeed the neonate even during the time of intervention and it will not delay the initiation of breastfeeding.

Purpose of the study:

This study is aimed to assess the effect of reflex zone stimulation on Breast feeding Efficacy among Postnatal women with LSCS in AIIMS Bhopal.

a) **Should I participate?**

Participation in this research is entirely voluntary.

b) What is expected of me if I join?

If you participate, we will provide Reflex zone Stimulation which include massage on feet to improve the level of breastfeeding efficacy and evaluation of the intervention also be the part of study.

c) How long will my part in the study last?

The duration of participation may last 5 postoperative days

d) Do I have to come for extra visits or undergo extra investigations for the study?

e) **What are the possible benefits in taking part?**

There is nonfinancial benefit involve in this study. Non pharmacological management technique of lactation which will improve breastfeeding efficacy. Reflex zone stimulation is a straight forward, affordable & effective therapy that can be used to improve breastfeeding efficacy.

f) What are the possible disadvantages and risks of taking part?

There is no harm/risk due to participation in this study

g) What happens to the information collected from me?

All information collected will be kept strictly confidential and not shared with anyone. Results from the study will be reported as group data and will not identify you in any way.

h) What if I change my mind regarding participation in the study?

You are entitled to change your mind and withdraw at any time during the study without any disadvantage or penalty.

i) Whom do I contact for more information or if I have further questions or concerns?

If you want any information or have questions or concerns, you can contact:

Dr. Shashank Purwar

Member Secretary

Institute Ethics Committee – Student Research

(7773010099, ihecpgr@aiimsbhopal.edu.in)

Malini Mondal

Post graduate student

Department of

Obstetrics and Gynecological Nursing

AIIMS, Bhopal

(malinim.mscnursing22@gmail.com

9745852085)

ANNEXURE 13

PARTICIPATION INFORMATION SHEET (HINDI)

प्रतिभागी सूचना पत्रक

.अध्ययन का शीर्षक: – एम्स भोपाल में एलएससीएस के साथ प्रसवोत्तर महिलाओं के बीच स्तनपान की प्रभावकारिता पर रिफ्लेक्स जोन उत्तेजना का प्रभाव।

2. अध्ययन जांचकर्ता

3.छात्र: मिस मालिनी मोंडल , M.sc नर्सिंग छात्र (2022-2024 बैच) प्रसूति और स्त्री रोग संबंधी नर्सिंग, कॉलेज ऑफ नर्सिंग, एम्स, भोपाल।

4.मार्ग दर्शक (गाइड): श्रीमती नसीमा शफकत, सहायक प्रोफेसर, प्रसूति एवं स्त्री रोग संबंधी नर्सिंग, नर्सिंग कॉलेज, एम्स, भोपाल।

5.सहमार्ग दर्शक:

- गीता भारद्वाज **,** सहायक प्रोफेसर, प्रसूति एवं स्त्री रोग संबंधी नर्सिंग, नर्सिंग कॉलेज, एम्स, भोपाल।

-डॉ. भारती सिंह, , सहायक प्रोफेसर, प्रसूति एवं स्त्री रोग, एम्स भोपाल

6. परिचयः मैं सीजेरियन सर्जरी के साथ प्रसवोत्तर महिलाओं के बीच स्तनपान दक्षता पर रिफ्लेक्स ज़ोन उत्तेजना के प्रभाव का आकलन करने के लिए एक अध्ययन कर रही हूं। रिफ्लेक्सोलॉजी पैरों और हाथों पर पूर्वनिर्धारित दबाव वाले बिंदुओं को उत्तेजित करके, दर्द से राहत देने की एक चिकित्सीय विधि है। यह अच्छे स्वास्थ्य को बढ़ावा देने के साथ साथ बीमारी को कम करने कर के लिए भी प्रभावी होती है क्योंकि यह तनाव, चोट और बीमारी के लक्षणों से राहत प्रदान करती है । हालांकि रिफ्लेक्स ज़ोन उत्तेजना स्तन के दूध के स्राव के लिए एक प्रभावी तरीका है। यह विधि सिजेरियन के बाद की माताओं के लिए स्तनपान के दौरान उन दवाओं के उपयोग को रोकने के लिए उपयोगी है जो बच्चे के लिए हानिकारक होती है। स्तनपान कई अंत स्त्रावी ग्रंथियों के नियंत्रण में है, विशेष रूप से पिट्यूटरी हार्मोन, प्रोलैक्टिन और ऑक्सीटोसिन। पैर के अंगूठे पर दबाव देकर यह हाइपोथैलेमस को संकेत देता है यह पिट्यूटरी ग्रंथि को उत्तेजित करता है और ऑक्सीटोसिन हार्मोन का उत्पादन में वृद्धि करता है जो स्तन के दूध को बढ़ाने के मदद करती है। इसके लिए नियमित प्रक्रिया प्रभावित नहीं होगी। थेरेपी के समय मां नवजात को स्तनपान करा सकती है। यह स्तनपान की शुरुआत में देरी नहीं करेगा।

7. इस अध्ययन का उद्देश्य:

इस अध्ययन का उद्देश्य एम्स भोपाल में सिजेरियन ऑपरेशन के साथ प्रसवोत्तर महिलाओं में स्तनपान की प्रभावशीलता पर रिफ्लेक्स ज़ोन उत्तेजना के प्रभाव का आकलन करना है।

8.भागलेना – इसमें क्या शामिल है ?

a.क्या मुझे भाग लेना चाहिए ?

इस शोध में भागीदारी पूरी तरह से स्वैच्छिक है।

b.यदि मैं इसमें शामिल होता हूं तो मुझसे क्या अपेक्षित हैं ?

यदि आप भाग लेते हैं, तो हम रिफ्लेक्स ज़ोन उत्तेजना प्रदान करेंगे जिससे स्तनपान के स्तर में सुधार करने के लिए पैरों पर मालिश शामिल करेंगे और हस्तक्षेप का मूल्यांकन भी इस अध्ययन का हिस्सा होगा।c.अध्ययन में मेरी भागीदारी कब तक चलेगी **?**

अध्ययन में आपकी भागीदारी संभवत:

भागीदारी की अवधि सर्जरी के बाद 3 दिनों तक हो सकती है

d. क्या मुझे इस अध्ययन के लिए अलग से आना पड़ेगा या अतिरिक्त जांच जरूरी होगी।

इस अध्ययन के लिए कोई अतिरिक्त दौरा या अतिरिक्त जांच नहीं की जाएगी।

e.इसमें शामिल होने से संभावित लाभ क्या है ?

इस अध्ययन से आपको गैर-वित्तीय लाभ हो सकते है। स्तनपान की गैर औषधीय प्रबंधन तकनीक जो स्तनपान की मात्रा में सुधार करेगी। रिफ्लेक्स ज़ोन स्टिमुलेशन एक सीधी, सस्ती और प्रभावी चिकित्सा है जिसका उपयोग स्तनपान की प्रभावकारिता में सुधार के लिए किया जा सकता है।

f.इसमें भाग लेने से संभावित हानि एवं जोखिम

प्रतिभागी से एकत्र की गई सभी सूचनाओं को गोपनीय रखा जाएगा, भले ही सभी सुरक्षित डेटा भंडारण और पहुंच सुनिश्चित करने के लिए संभावित उपाय किए जाएंगे।

g.मेरे बारे में एकत्र की गई सूचना का क्या किया जाएगा ?

एकत्र की गई सभी सूचना पूर्णतः गोपनीय रखी जाएगी तथा अध्ययन से प्राप्त निष्कर्षों को अन्य किसी से साझा नहीं किया जाएगा। इन्हें ग्रुप आंकड़े के रूप मे रिपोर्ट किया जाएगा और किसी भी तरह से आपकी पहचान उजागर नहीं होगी।

h. इस अध्ययन मे भाग लेने के लिए मेरे विचार बदलने पर क्या होगा ?

अध्ययन के दौरान किसी भी समय बिना किसी क्षति या दंड के आपको अपने विचार बदलने का पूरा अधिकार है।

I.इस संबंध मे अधिक जानकारी के लिए या बाद मे मेरे मन मे कोई प्रश्न या शंका होने पर मुझ किनसे संपर्क करना होगा ?

यदि आपको ईसूचना चाहते हैं या आपका कोई प्रश्न है या शंका है तो आप इन नंबरों पर संपर्क कर सकते हैं:

ANNEXURE 14

PARTICIPANT INFORMED CONSENT FORM (PICF)

<u>प्रतिभागी सूचना सहमति प्रपत्र</u>

प्रतिभागी सूचना सहमतिप्रपत्र

[PARTICIPANT INFORMED CONSENT FORM (PICF)]

इस अध्ययन के लिए प्रतिभागी का पहचान नंबरः …….....

Participant Identification Number for this Study: ……..

अनुसंधान का शीर्षकः .....

Title of Project : …….....

शोधकर्ता छात्रका नाम.....फोन नं:.....

Name of Student Investigator :…… ……Tel No.(s) : …….....

शोध मार्गदर्शक का नाम: .....

Name of Thesis Guide : …….....

मैंने दिनांक 20.08.2022 के सूचना पत्रक संस्करण II में दिए गए सभी तथ्यों को सावधानीपूर्वक पढ़ लिया है/ मुझे अपनी भाषा में स्पष्ट रूप से विस्तारपूर्वकसमझा दिया गया है, और मैंने तथ्यों कोपूर्णतः समझ लिया है। मैं पुष्टि करता/ करती हूँ, किमुझे सवाल पूछनेके अवसर प्रदान किए गए। The contents of the information sheet version II dated 20 August 2022 that was provided have been read carefully by me / explained in detail to me, in a language that I comprehend, and I have fully understood the contents. I confirm that I have had the opportunity to ask questions.

मुझे इस अध्ययन की प्रकृति एवं उद्देश्य और इसके संभावित जोखिमों / लाभों तथा अध्ययन की अनुमानित अवधि एवं अन्य प्रासंगिक जानकारी के बारे में विस्तारपूर्वक समझा दिया गया है। मुझे पता है कि इस अध्ययन में मेरी भागीदारी स्वैच्छिक है तथा मैं इस अध्ययनसे किसी भी समय बिना कोई कारण बताए, अपना नाम वापस लेने के लिए स्वतंत्र हूं और नाम वापस लेने पर मेरी चिकित्सा देखभाल या कानूनी अधिकारों पर कोई प्रभाव नहीं पड़ेगा। The nature and purpose of the study and its potential risks/benefits and expected duration of the study, and other relevant details of the study have been explained to me in detail. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal right being affected.

मैं समझता/समझती हूं कि इस अनुसंधान में मेरी भागीदारी से मेरे बारे में एकत्र की गई जानकारी और मेरे चिकित्सीय दस्तावेजों के किसी भी भाग को एम्स के जिम्मेदार व्यक्तियों द्वारा ही देखा जाएगा। मैं इन व्यक्तियों को मेरे रिकॉर्ड प्राप्त करने की अनुमति प्रदान करता/ करती हूँ। I understand that the information collected about me from my participation in this research and sections of any of my medical notes may be looked at by responsible individuals from AIIMS. I give permission for this individuals to have access to my records.

यदि प्रतिभागी बच्चा है तो उसकी मौखिक या लिखित सहमति प्राप्त की गई है। If participants is child, his/her verbal of written assent has been obtained.

मैं उक्त अध्ययन में भाग लेने के लिए सहमत हूं/I agree to take part in the above study.

_____

(प्रतिभागी के हस्ताक्षर/ बांए अंगूठे का निशान) (Signature/Left Thumb Impression)

दिनांक/Date……स्थान/Place …….....

प्रतिभागी का नाम/Name of the participant…….....

पिता/पति/पत्नी का नाम /Son/Daughter/Spouse of…….

डाक का पूरा पता /Complete Postal Address …….....

अगर अशिक्षित हों / If illiterate.

सूचना पत्र को प्रतिभागी को पढ़ा और समझाया गया है और प्रश्न पूछने का अवसर दिया गया है। मैं पुष्टि करता हूं कि व्यक्ति ने स्वतंत्र रूप से अपनी सहमति दी है ।

The information sheet has been read and explained to the participant and given the opportunity to ask questions. I confirm that the individual has given consent freely.

कानूनी रूप से स्वीकार्य प्रतिनिधि या निष्पक्ष गवाह के हस्ताक्षर

Signature of Legally acceptable representative or impartial witness.

दिनांक/Date

एलएआर या निष्पक्ष गवाह का नाम / Name of LAR or impartial witness .

पता / Address :-

प्रमाणित किया जाता है कि उक्त सहमति मेरी उपस्थिति में प्राप्त की गई ।

This is to certify that the above consent has been obtained in my presence.

_____

छात्र शोधकर्ता के हस्ताक्षरदिनांक…….. स्थान……

Signature of the student Investigator Date …… Place ……

ANNEXURE 15

MASTER DATA SHEET

AGE	RELIGION	EDUCATIONAL STATUS	EMPLOYMENT	RESIDENCE	DURATION OF MARRIAGE	TYPE OF DIET	FAMILY	SOCIO ECONOMIC	NO OF VISITS	TYPE OF PREGNANCY	ORDER OF CURRENT PREGNANCY	GESTATIONAL AGE	NO OF PRE LIVING CHILDRENS	INDICATION OF LSCS	INITIATION OF FEEDING	TYPE OF FEEDING	GENDER	BIRTH WEIGHT	ABORTION	INFERTILITY
22	hindu	Higher Secondary	Unemployed	Rural	3 yr	Veg	Joint	loer middl	5	planned	1st	36	nil	Relative (MSL)	1-2 hr	Breastmilk	male	2.6	nil	nil
37	hindu	Graduation and above	Self employed	Urban	3-5 yr	Non veg	Joint	Upper middle	10	planned	1st	38	nil	Relative (MSL)	1-2 hr	Breastmilk	male	2.7	yes (SA)	Nil
28	hindu	Graduation and above	Unemployed	Urban	1-3yr	Veg	neuclear	lower middle	9	planned	1st	38	nil	Relative (NPOL)	Within 1h	Breastmilk	female	2.1	nil	nil
27	hindu	Higher Secondary	Unemployed	Rural	1-3yr	Veg	Joint	upper low	12	unplanne	1st	41	nil	Absolute (CPD)	Within 1h	Breastmilk	female	2.88	yes (SA)	nil
24	hindu	Higher Secondary	Unemployed	Rural	1-3yr	Veg	Joint	upper low	4	unplanne	1st	38	nil	Relative (Fetal distress)	Within 1h	Breastmilk	male	3.05	nil	nil
35	hindu	primary	Unemployed	Urban	>5 yr	veg	Joint	lower mid	8	unplanne	2nd	39	1(2.5yr)	Absolute(prev LSCS)	Within 1h	Breastmilk	male	3.45	nil	nil
20	hindu	primary	Unemployed	Rural	1-3yr	Veg	neuclear	lower mid	10	unplanne	1st	39	nil	Relative (Fetal distress)	1-2hr	Breastmilk	male	3.55	nil	nil
31	hindu	Higher Secondary	Unemployed	Urban	3-5yr	Non veg	Joint	lower mid	8	planned	2nd	39	1(3)	Absolute (prev LSCS)	1-2hr	Breastmilk	female	2.87	nil	nil
23	hindu	Graduation and above	Self employed	Urban	1-3 yr	Veg	extended	lower mid	12	unplanne	1st	39	nil	relative (oligohydramnios & failure to induction)	1-2hr	Breastmilk	female	2.58	nil	nil
26	hindu	primary	Unemployed	rural	3-5 yr	nonveg	Joint	upper low	12	unplanne	2nd	40	1 (2.5)	Absolute (prev LSCS)	Within 1h	Breastmilk	female	2.7	nil	nil
34	hindu	Graduation and above	Unemployed	Urban	1-3 yr	non veg	Joint	upper low	10	planned	2nd	40	nil	Relative (MSL)	Within 1h	Breastmilk	female	3.59	yes (SA)	nil
26	hindu	Higher Secondary	Unemployed	Rural	1-3 yr	non veg	neuclear	lower mid	6	planned	1st	36	nil	Relative (PROM)	Within 1h	Breastmilk	female	2.31	nil	nil
32	hindu	Graduation and above	Self employed	Urban	3-5 yr	veg	neuclear	upper low	14	planned	1st	39	nil	Relative (NPOL)	Within 1h	Breastmilk	male	3.5	nil	yes
35	hindu	primary	Unemployed	Rural	>5 yr	veg	extended	lower mid	6	planned	3rd	38	1 (4 yr)	Relative (Abruptio placentace)	Within 1h	Breastmilk	male	3.4	yes (SA)	nil
22	hindu	primary	Unemployed	rural	3-5 yr	Veg	neuclear	lower mid	10	planned	2 nd	39	1 (2)	Relative (placenta acreeta with breech)	1-2 hr	Breastmilk	female	3.4	nil	nil
30	hindu	Higher Secondary	Unemployed	Rural	>5	Veg	neuclear	lower mid	7	unplanne	2nd	40	1(5)	Absolute (prev LSCS)	1-2hr	Breastmilk	male	3.205	nil	nil
31	hindu	Graduation and above	Unemployed	Urban	1-3 yr	Veg	neuclear	Upper mid	13	planned	1st	40	nil	Relative (fetal distress)	Within 1h	Breastmilk	female	3.38	nil	nil
24	hindu	secondary	Unemployed	Rural	3-5 yr	Non veg	neuclear	lower mid	9	unplanne	2nd	39	1(3)	Absolute (prev LSCS)	Within 1h	Breastmilk	male	2.59	nil	nil
31	hindu	Graduation and above	govt employee	Urban	>5yr	Veg	Joint	Upper mid	15	planned	2nd	38	1(4)	Absolute (prev LSCS)	Within 1h	Breastmilk	female	2.5	nil	nil

ANNEXURE 16

CODING DATA SHEET

AGE	RELIGION	EDUCATIONAL STATUS	EMPLOYMENT	RESIDENCE	DURATION OF MARRIAGE	TYPE OF DIET	FAMILY	SOCIO ECONOMIC	NO. OF VISITS	TYPE OF PREGNANCY	ORDER OF CURRENT PREGNANCY	GESTATIONAL AGE	NO OF PRE LIVING CHILDRENS
1	1	5	1	1	2	1	1	2	3	1	1	3	2
1	1	3	1	2	2	1	2	3	3	1	1	2	2
1	1	4	1	2	2	2	2	3	3	2	1	3	2
4	1	4	1	2	4	2	2	3	2	1	2	3	1
2	1	5	1	2	2	2	1	2	3	1	1	3	2
3	1	4	1	2	3	2	1	3	3	2	2	3	1
2	1	5	1	2	2	2	1	3	3	1	1	2	2
1	2	3	1	1	3	2	2	3	2	1	2	3	2
1	1	3	1	1	4	2	1	3	2	2	2	2	1
2	1	2	1	2	3	1	1	3	3	1	2	3	1
3	1	5	3	2	3	1	1	2	3	1	2	3	2
2	1	5	1	2	2	1	1	3	3	1	2	3	2
3	1	5	2	2	4	1	1	3	3	1	3	2	1
3	2	2	1	1	4	2	2	3	1	2	3	3	1
2	1	2	1	2	3	2	1	2	3	2	2	3	1
2	1	5	2	2	2	1	1	2	3	1	1	3	2
3	1	4	1	2	4	1	1	3	3	1	2	3	1
1	2	4	1	2	2	2	1	3	3	1	1	1	2
2	1	4	1	2	3	1	1	3	3	1	3	3	2
3	1	4	1	1	3	1	1	4	3	1	2	3	1
2	1	4	1	1	2	1	1	4	2	1	2	3	2
2	1	4	1	1	2	2	2	4	3	1	1	3	2
1	1	2	1	1	1	2	1	5	2	2	1	3	2
3	1	3	1	1	4	2	2	4	2	2	3	3	1
2	1	4	1	1	2	1	1	4	2	1	2	3	2
2	1	4	1	1	2	2	2	4	3	1	1	3	2
1	1	2	1	1	1	2	1	5	2	2	1	3	2
3	1	3	1	1	4	2	2	4	3	2	3	3	1
2	1	4	1	1	2	1	2	4	2	1	1	3	2
1	1	4	1	1	2	1	1	4	3	1	1	2	2
4	1	5	4	2	4	1	1	2	3	1	3	2	1
2	1	5	1	2	3	1	1	3	3	1	1	3	2
1	1	4	1	2	2	1	1	3	3	2	1	3	2
2	1	3	1	1	3	2	1	3	2	2	3	3	1
3	1	5	2	2	3	2	1	2	3	2	2	3	1
1	1	4	1	2	2	2	1	2	3	1	1	3	2
2	1	4	1	2	3	2	1	2	3	2	2	3	1
3	1	5	3	2	4	2	2	1	3	1	2	3	1
3	1	4	1	2	3	2	2	2	3	2	2	3	1
3	1	5	2	2	2	2	2	2	3	1	1	2	2
3	1	3	1	1	3	1	2	5	2	2	2	3	1
2	1	3	1	1	2	1	1	3	3	1	1	3	2
3	1	5	1	2	2	1	1	2	3	1	1	3	2